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MR. LIANG TUN-YEN, Minister of Communications.

THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

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THE TRAMWAYS OF SHANGHAI

DESCRIPTIONS OF THE THREE SERVICES

Shanghai with its three services, British, French and Chinese, is now very adequately supplied with trams. The total length, on a single track basis, is over forty miles. The motors and cars are thoroughly up to date, and shortly railless cars are to make their appearance in the International Settlement.

Following are articles describing the three systems.

THE SHANGHAI ELECTRIC CONSTRUCTION CO., LTD.

The present-day visitor to Shanghai finds it difficult to realize that only six years ago there were no trams in the Foreign Settlement. The trams are to-day such a dominating feature of street traffic that to visualize the city without its standards and overhead wires, its cars and its trailers, is no easy task. In 1913, the trams carried 47,686,648 passengers and it is estimated that the total for 1914 will be about 60 millions. What did all these people do in the tramless days of the past? Evidently the trams came none too soon. As far as appearances go the ricksha puller and the wheelbarrow coolie still find ample employment. It is evident, however, that the coming of the trams put a check on the further development of the manually drawn vehicle. An indication of this is found in the fact that, whilst the number of public rickshas licensed increased 55% between 1903 and 1907, the average number per annum for the following six years (the trams started in 1908) was less than the number in 1907. The number of private rickshas has been somewhat reduced since 1907. Had both public and private rickshas gone on increasing in number at the rate they had been doing before the trams started, many of the streets would no doubt have been congested by this time to a degree that would have rendered them well-nigh impassable. In all large cities, it has been found that the larger the volume of traffic to be carried the larger and faster must be the units employed for conveyance. Thus, from single-passenger vehicles there is the step in the evolution of the means of Passenger Transit to vehicles such as tramcars or omnibuses; and where the traffic is so dense that such means are inadequate unaided, Underground or Overhead Railways have to be resorted to, with long trains travelling at an average speed much in excess of that which is possible for street vehicles. The increase in the number of motor cars in Shanghai is more or less offset by a reduction in the number of carriages.

Looking back it is quite easy to understand that the want of trams was not felt in the very early days. Then the foreign population of Shanghai was comparatively small, and the Chinese residents of the Settlements a negligible quantity. But, as the number of foreign residents increased and the influx of Chinese that began with the Taiping rebellion continued and augmented, it became necessary for the city to spread. Residences sprang up in localities far removed from the business centre, and although the wealthy had their private conveyances, and the ricksha and the wheelbarrow were at the disposal of those less well-off, the need for mechanical traction began to be evident. After discussion of the matter for a number of years, it was decided by the Ratepayers that offers should be invited for a system of Electric Tramways. This was done, and in October, 1905, Messrs. Bruce, Peebles and Co., Ltd., of Edinburgh were granted a concession to construct and operate Electric Tramways in the Foreign Settlement. The construction work was carried out by this firm. The concession was transferred to the Shanghai Electric Construction Co., Ltd., which Company owns and operates the system.

It was specified that the track should be of meter guage; that grooved girder pattern rails weighing 90 pounds per yard should be laid upon a concrete bed 6 inches thick, and that the roadway between the rails and for 18 inches on each side of the outer rails should be paved and maintained in repair by the Company. A royalty of 5 per cent. on the gross receipts of the Company is also payable to the Council. The Company has to pay municipal taxes on all its buildings. It was required to contribute £7,500 towards the cost of the present Garden Bridge and North Chekiang Road Bridge.

The concession further stipulated that the Company should take its electric current from the Council's electric station; and that, if the Council should decide at any time during the continuance of the agreement to allow the Company to generate its own current, the Company should purchase the Council's traction power plant, at cost price, less 7½ per cent. annual depreciation. It was also provided that, should the Company sell its tramway lines, or the Council its electricity undertaking, the purchaser in either case must be a British Company or person.

COST OF POWER.

By a supplementary agreement of the same date the Company contracted to purchase power for its lines from the Council, which was already operating a power plant for electric lighting. Direct current at 500/550 volts was specified and 600 kilowatts was fixed as the maximum power to be required; but the Council agreed to increase this maximum supply upon 12 months' notice from the Company. By arrangement, plant for a maximum demand of 900 kilowatts was installed before the opening of the Tramways. Rates for power were fixed, with the provision that a revision of rates should be made at the end of every five years, the revised rates to be based upon a comparison of the original estimated cost of generating power with the actual cost at the time of the revision. The inclusive rates

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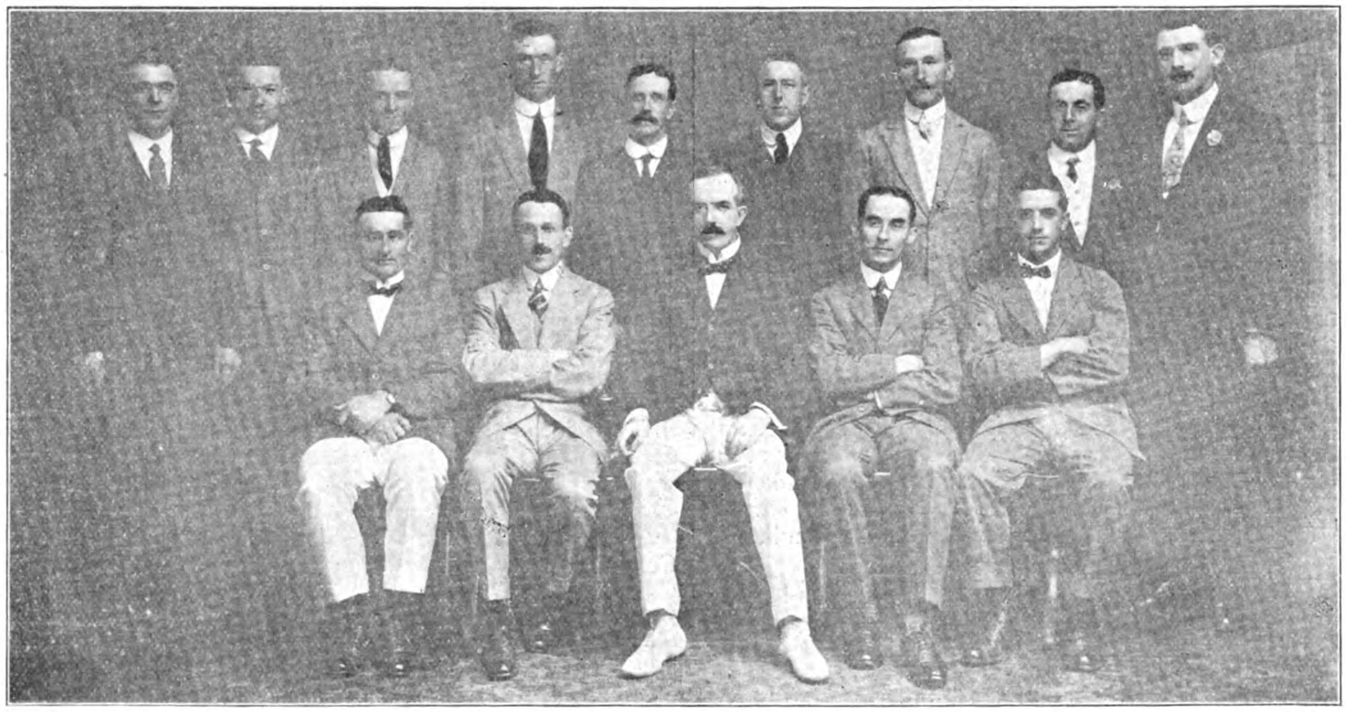
Sir Alfred Dent, K.C.M.G.
Chairman of the Shanghai Electric Construction Co., Ltd.

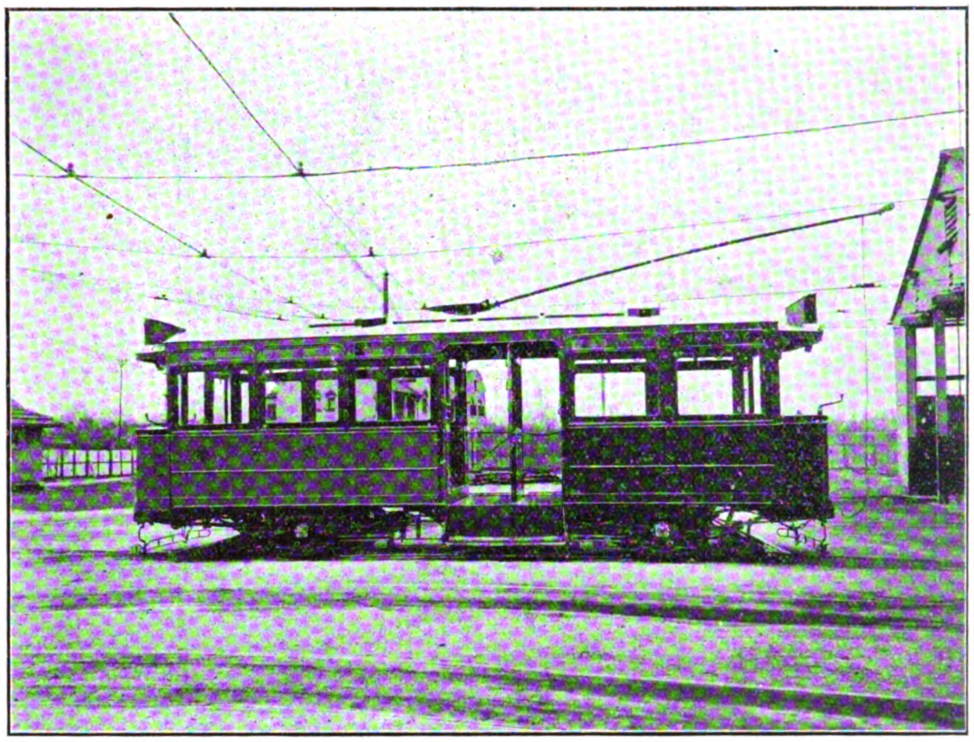
Mr. Edward Wheeley, Chairman of the Local Board of the Shanghai Electric Construction Co., Ltd.

fixed per unit, with a minimum annual consumption of 1,250,000 units, were as follows: First 600,000 units, 4.8 tael cents; second 600,000 units, 4.6 tael cents; third 600,000 units, 4. 4 tael cents. These initial rates were based upon an estimated production cost of 3.28 tael cents per unit, but it was found, during the second year that the line was in operation, that, owing to the consumption having greatly exceeded the estimated amount upon which this scale was based without the maximum of 900 kilowatts being exceeded, the initial rates were too high. The Council, therefore upon application by the Company, agreed



Some of the European Officials of the Shanghai Electric Construction Co., Ltd.
From left to right
Sitting:—Mr. H. J. Blatchford, Mr. J. G. Smeaton, Mr. D. McColl (General Manager), Mr. E. Carroll, Mr. J. L. Gordon.
Standing:—Mr. A. W. McLean, Mr. C. F. Taylor, Mr. G. Pollock, Mr. T. H. Brownlie, Mr. W. Doran, Mr. H. G. Sadler, Mr. S. Marks, Mr. J. H. Watling, Mr. P. Cassidy.

Foreign Settlement Trams.—Canton Road.

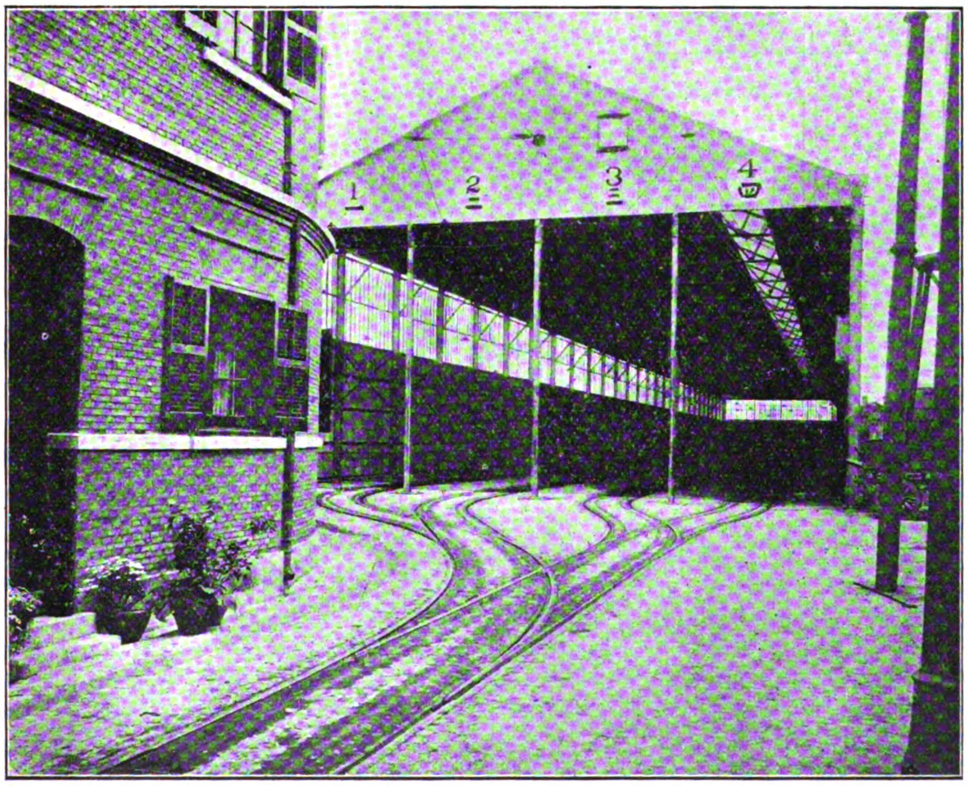


Foreign Settlement Trams.—The up-to-date Mid-Entrance Cars now in general use.

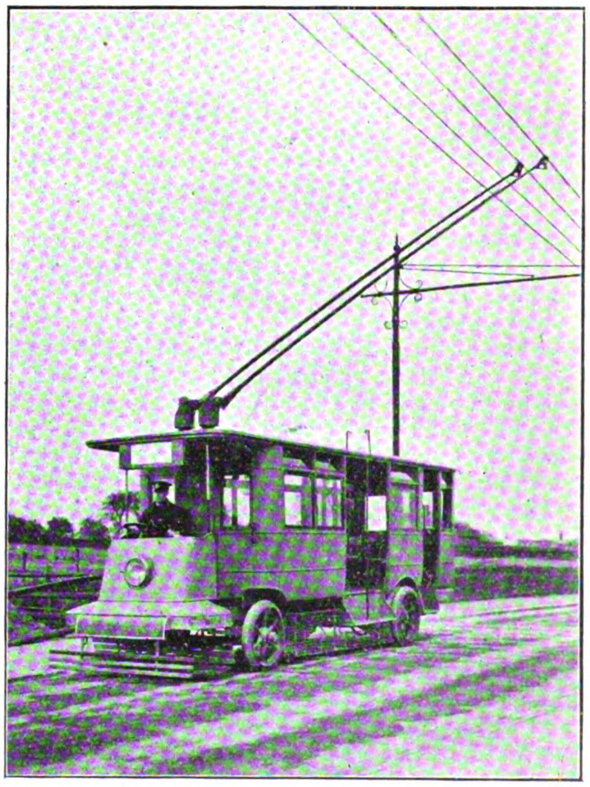
to an arrangement which meant, in effect, that the Company would not have to pay double fixed charges on current taken beyond the output originally estimated. This arrangement provided for a fixed charge of 4,799 taels per month for a demand not exceeding 900 kilowats, plus a flat rate of 1.5 tael cents per unit for each unit consumed. The result for a consumption of 2,859,334 units in 1912 was an over-all charge equal to 3.51 tael cent per unit supplied. The revision due at the end of the first period of five years (March 5, 1913) resulted in a reduction of the fixed charge to 3,952 taels per month for a demand not exceeding 900 kw. plus a flat rate of .789 tael cent per unit supplied. The effect of this reduction is shown by the figure for the overall charge per unit for the period from March 5, to December 31, 1913, which was 2.30 tael cents.

CONSTRUCTION AND EQUIPMENT

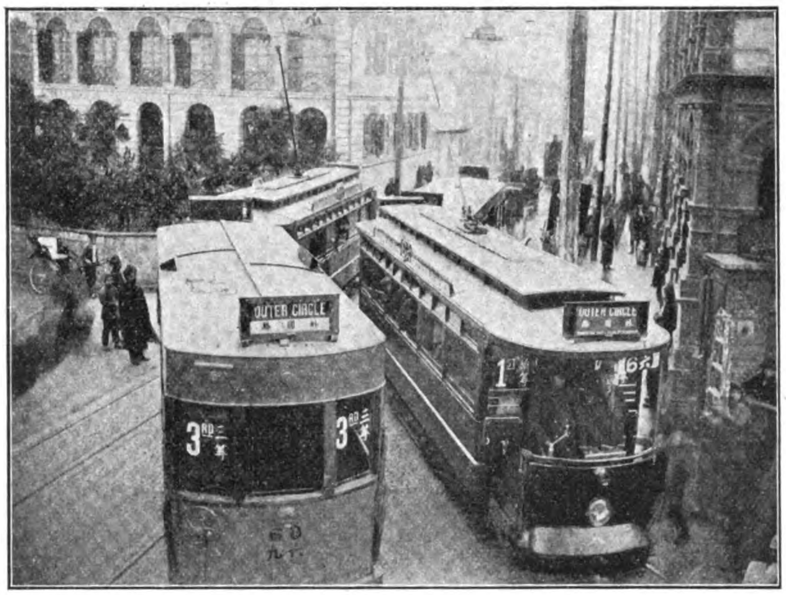
The franchise having been granted, construction of the track, cars, car sheds and repair shops was started. The concession stipulated for conformity with the British Board of Trade Regulations and these have been complied with. In the way of rolling stock the Company had to provide sixty-five single-deck double-entrance cars, each to seat thirty-two persons, twelve in the first class and twenty in the second class, and each equipped with two twenty-five horse-powor motors. It was required that each car should develop a speed of 18 miles an hour. For the complete equipment the contract price was £277,000. Including



Foreign Settlement Trams.—The Wayside Car Shed.



Foreign Settlement Trams.—One of the new railless trams.



Foreign Settlement Trams.—Corner of Seward Road and Minghong Road.

Preliminary Expenses, additional rolling stock, car sheds and other items, the total expenditure for capital purposes was £388,299 at the end of 1913.

INAUGURATION AND DEVELOPMENT OF SYSTEM

The system was inaugurated in March, 1908 and in March, 1914, the Company was operating its cars over 9.17 miles of double track and 7.15 miles of single track, or the equivalent of 25.7 miles of track measured as single, practically the same length as that opened in 1908. The number of motors in service in March, 1914, was eighty and the trailers numbered forty; these are this year being increased to 90 and 55 respectively, whilst 7 Rail-less Electric cars are being introduced, making a total of 152 cars as compared with 65 when the system opened.

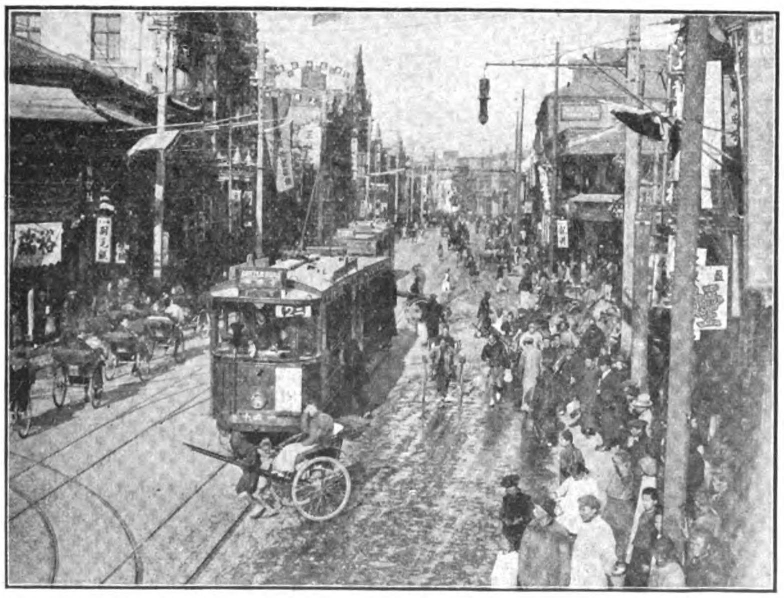
Mr. D. McColl, General Manager of the Shanghai Electric Construction Co.

Another proof of development is supplied by the figures relating to passenger traffic. In 1909, the first complete year of working, 11,772,715 persons were carried, and in 1913 the number had increased to 47,686,648, while it is estimated that about 60,000,000 will be carried this year. For the first five months of the year (usually the lightest) 21,582,944 passengers were carried as against 17,270,360 in the first five months of 1913. To build up the traffic was a problem complicated by the special conditions that exist in China. The 1st class traffic is catered for by Season Tickets, reduced recently from $8 to $6 per calendar month, and by moderate differential fares. Books of coupons are also issued at 36-3 cent coupons or 54-2 cent coupons for $1. As regards 3rd class, the standard of living is so low that particular attention had to be paid to the ability of the native population to pay for the service offered them. The policy adopted of low differential 3rd class fares designed to attract the native population has justified itself by its remarkable success. As time went on the management afforded more liberal facilities, though the fares in comparison with those charged on European and American systems were low from the first. Half-mile journeys can now be travelled 3rd class for 1 cent and the other distances are approximately at *pro rata* fares up to a maximum of 8 cents. To give an exact equivalent in English or United States currency for Shanghai fares requires deduction of currency depreciation loss. The only thing about a cent in China that can be absolutely relied upon is that it is never worth a cent. At present it is worth barely $\frac{3}{4}$ths of a cent. = about 1/6th of a penny or 1/3rd of a United States cent. The loss on this debased money for the first five months' operations in 1914 was no less than Mexican $120,655, over $6,000 more than was the case in the similar period of 1913. The Chinese authorities still adopt the time-honoured, but economically disastrous, system of turning out unlimited quantities of token coins, and recently unusually large quantities have been coming to Shanghai, apparently from the Nanking Mint. It is to be hoped that the Chinese Government will restrain this indiscriminate overproduction of debased coins in the interests of the community generally and as soon as possible standardize its currency on a really sound basis.

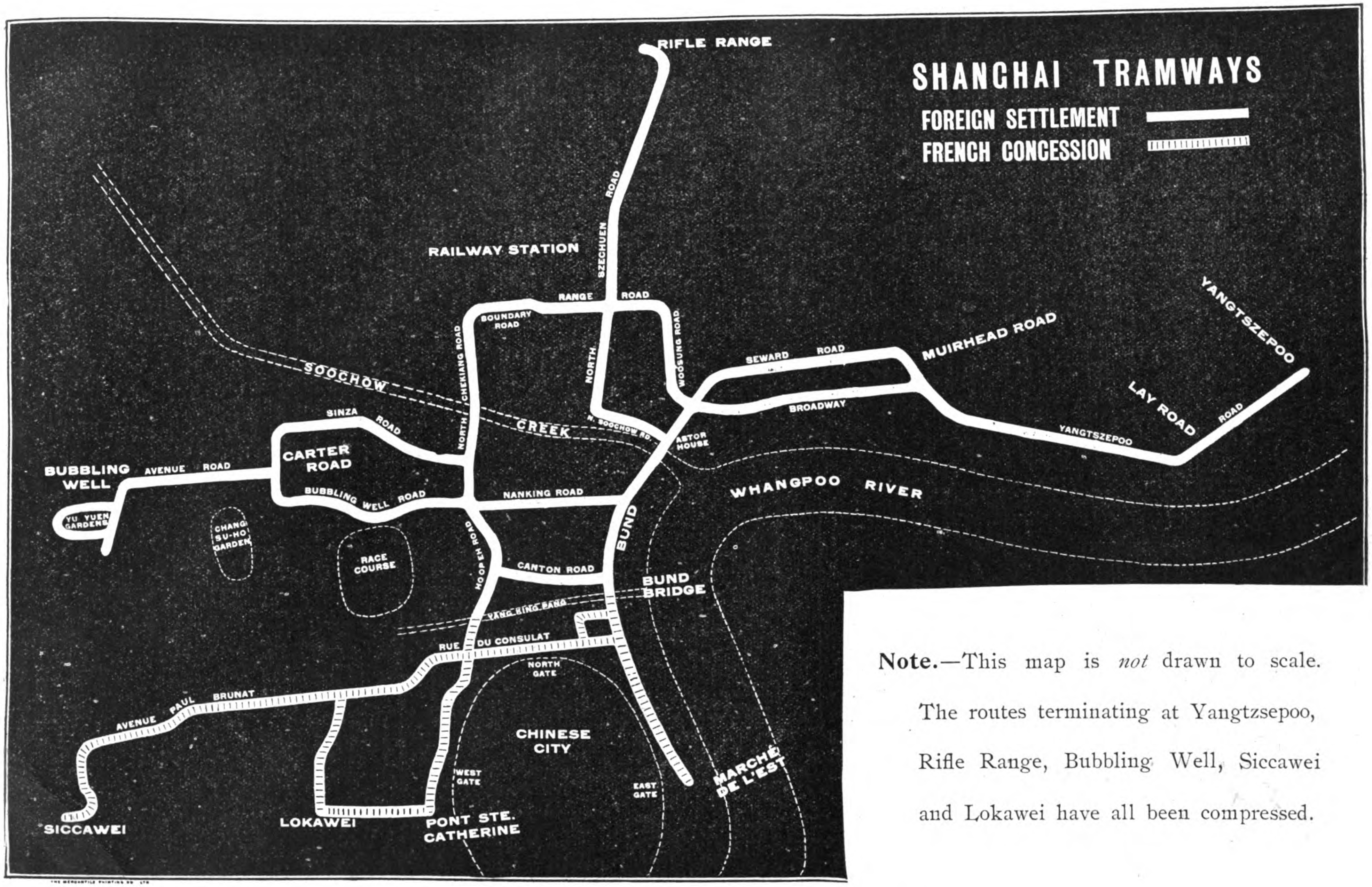
COST OF OPERATION

The following table shows the cost of operation, revenue and loss from currency depreciation for the last three years in Mexican currency:—

Items	1911	1912	1913
Total gross receipts	$809,964	$1,042,785	$1,183,942
Less loss by currency depreciation	168,848	239,375	258,810
Effective receipts	641,116	803,410	925,132
Working expenses	425,160	486,459	495,093
Excess of receipts	215,956	316,951	430,039
Less royalty paid to Council	31,783	39,784	46,018
Working profit (subject to London expenses and depreciation)	184,173	277,167	384,021



Foreign Settlement Trams.—Nanking Road.



Note.—This map is *not* drawn to scale. The routes terminating at Yangtzsepoo, Rifle Range, Bubbling Well, Siccawei and Lokawei have all been compressed.

The tram systems of the Foreign (International) Settlement and the French Concession. A plan on another page shows the route traversed by the Chinese (Nantao) tramway.

Foreign Settlement Trams.—Inside training of motormen.

On another basis the following figures in Mexican currency will be found interesting:—

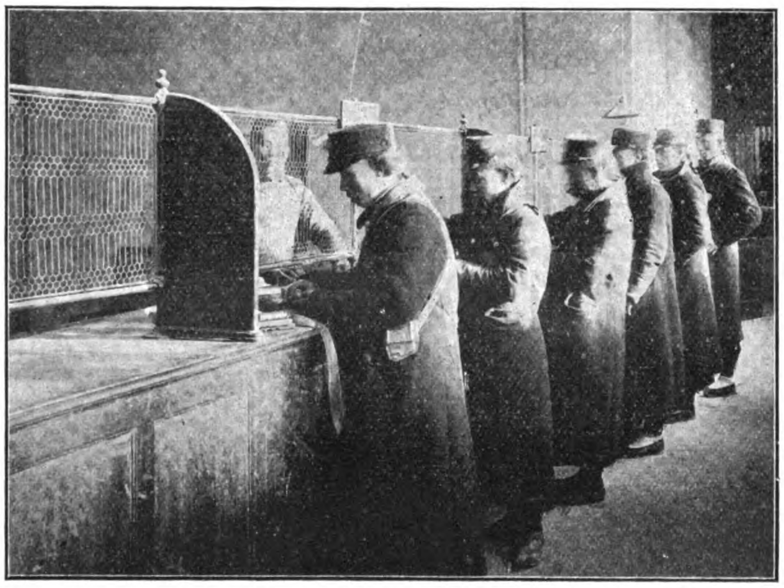
	1909	1910	1911	1912	1913
Effective receipts per passenger (cts.)	3.86	2.95	2.35	1.97	1.94
Working expenses per passenger ,,	3.45	2.30	1.67	1.29	1.13
Working profit per passenger ,,	.41	.65	.68	.68	.81

The capital of the Company is £320,000 and no dividend was paid until 1912 when a distribution of five per cent. was made. On May 14 last at the eighth annual meeting of the Company a dividend of seven per cent. for 1913 was declared, while £10,000 was placed to renewals account and £3,000 was written off preliminary expenses account. At December 31, 1913 the Renewals fund stood at £27,737 and up to that date sums totalling £12,027 had been written off Capital account under the heading of Preliminary Expenses and general expenditure during construction.

RAILLESS CARS

Owing to the extreme narrowness of most of the streets not yet supplied with trams, no very great addition to the mileage of track may be anticipated, at all events until the Settlement is extended. There is, however, great need for extended communication facilities in many of these narrow streets, and consequently the Company made an investigation into the possibilities of Railless Traction, the General Manager in 1912 inspecting such systems on the Continent and in the United Kingdom. Upon his recommendation, the Company, early in 1913, applied for the permission of the Municipal Council to establish a preliminary Railless route. Owing to unforeseen delays the cars ordered from the Railless Electric Traction Construction Co., Ltd., have not yet been delivered, and consequently this interesting innovation has not yet been made in Shanghai, although it is expected to be in operation in August or September. There seems good reason to believe that the railless system will prove as successful in Shanghai as it has elsewhere. Indeed, many incline to the belief that most extensions to Tramway systems will in future be made by means of railless vehicles. Experience in Great Britain has shown that the cost of installation is much less than the average cost of tramways in that country. The heaviest items of expenditure in the construction of tramways are in connection with the permanent way and road-widenings, whereas any road suitable and wide enough for ordinary traffic is suitable for railless cars. A conspicuous advantage in favor of the railless car is that it can be steered through other traffic with the greatest ease and pass obstructions with the same facility as any other road vehicle. It is, therefore, free from a handicap which, in the case of tramways, is often serious, particularly in narrow streets where the tramcar is continuously impeded by vehicles standing at the roadside or to whose slow progress it is forced to accommodate itself. From the passenger's point of view the railless car is preferable as it can be drawn up to the kerb to take up or set down passengers.

Foreign Settlement Trams.—Training Conductors.



Foreign Settlement Trams.—Conductors paying in at Cash Office.

THE CAR SHEDS AND SHOPS

The Company has fully equipped car sheds at Bubbling Well and at Wayside. The car-repair shops, which are at Bubbling Well, consist of a machine shop, smithy, brass foundry, armature shop, coil room, carpenter shop, painting shop, also general overhauling bays.

A 10 horse-power motor drives the main shafting which, in turn, drives the various machines in the machine shop by means of pulleys and belts.

The machines used include the following:—

A wheel tyre turning lathe, used for re-turning the tyres of car wheels after the flanges have worn thin.

An emery grinder by Mitchell, Graham & Sons, Edinburgh.

A high speed drilling machine, this is used for drilling small holes (up to ½") in metal fittings.

A lathe, 4".

A lathe, 6".

A lathe, 10".

A large drilling machine by J. Butler, this is used for drilling large holes (up to 3") mainly in steel plates for renewing the checks of rails at curves.

Metal shaping machine by Perkins & Co., Leeds.

Buffing or polishing machine by own shops.

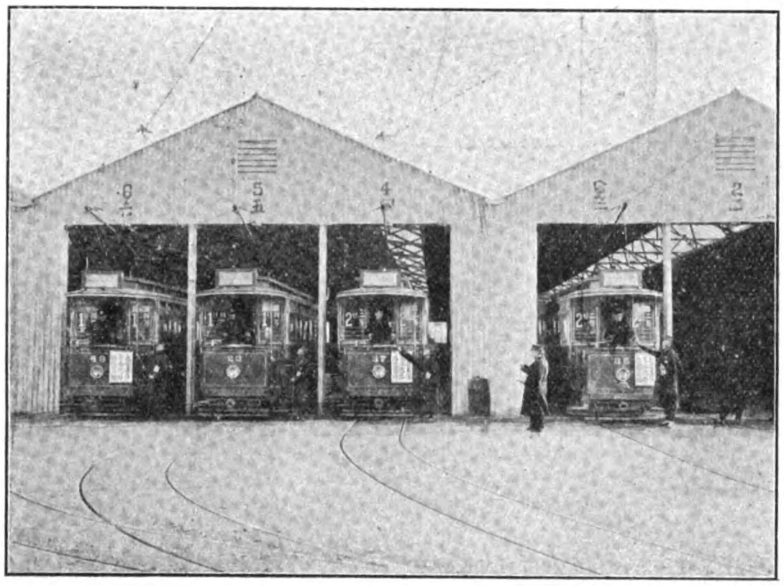
Drilling machine 20".

Hydraulic wheel press.

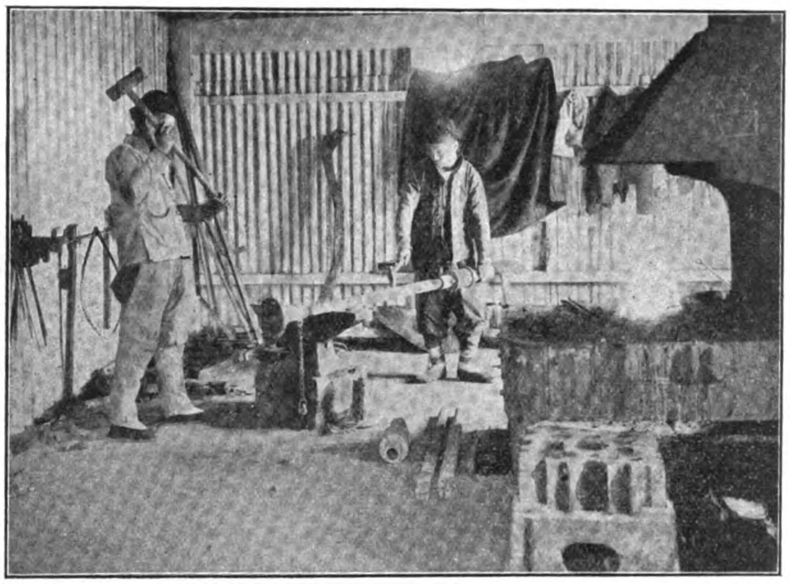
Bunsen burner for shrinking new tyres on to car wheels.

H.P. motor, prints all the tickets required by the Company as well as those for the French Tramways.

There is also a sand drying plant for drying the sand before it is placed in the sand boxes of the cars; this plant is driven by a 15 H.P. Bruce Peebles motor. When a car has to be stopped suddenly to avoid an accident, the Motorman can, by striking with his foot a pin on the floor where he stands, release sand on the rails in front of the wheels where it assists the braking.



Foreign Settlement Trams.—Bubbling Well Car Sheds.



Foreign Settlement Trams.—Bubbling Well Work-shops, the Smithy.

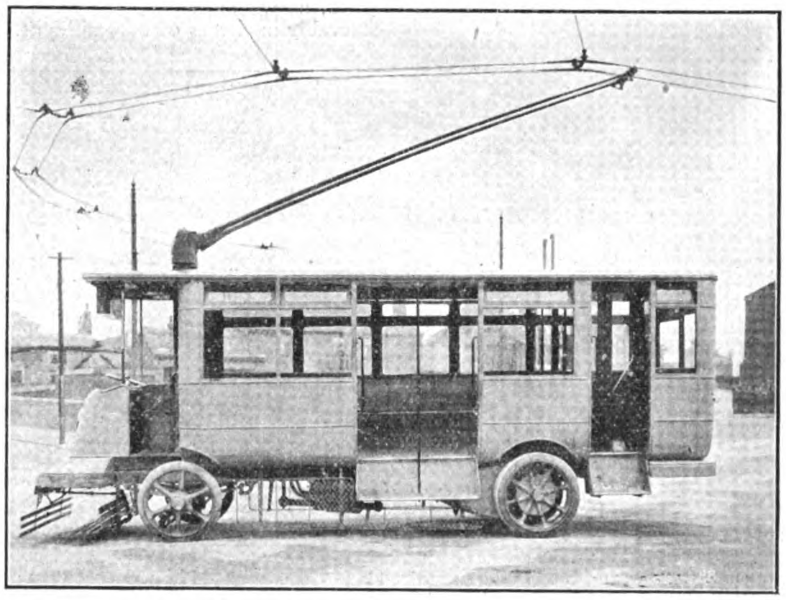
There is also as part of the shop equipment, a complete oxy-acetylene welding and cutting outfit. The Company finds considerable economy in generating its own acetylene. The whole of this plant is mounted on a flat trolley, which can be transferred to any part of the system. Electric arc welding is also carried out by a small plant designed by the shop staff. The following additional machine shop equipment has recently been installed:—

One 18" shaping machine and one sensitive drilling machine.

Steel motor pinions are imported, the gear ratio being 14.68. The smithy is equipped with 4 fires. No power hammers are yet in use. The brass foundry equipment consists of a 60-pound Carr's patent furnace, one gas fired core oven, one pattern loft and one gas fired babbitt metal pot. Everything that is required in the way of brass fittings is cast in this shop, small cast iron work also being done now, and the re-babbitting of car bearings is also carried out by the foundry staff.

The armature shops are also equipped with one electrically heated drying out stove, one gas-fired soldering-iron stove, and the usual racks and forms for winding field and armature coils. All new armatures and field coils are made by the Company and old ones repaired. The Company also assembles its own commutators (the copper cylinder arrangement on the end of the armature). These commutators become worn down and require, from time to time, to be machined or to be replaced by new ones. In the event of serious faults the coils of the armatures require to be replaced by new ones. In the Carpentry shop there is a band saw by Jones, Burton, driven by a 5 H.P. motor.

There is a Ticket Printing Room with a machine that turns out 360 tickets a minute. The Machine, which is driven by a 1½



Foreign Settlement Trams.—The railless car.

The car bodies are built locally by Chinese contractors to designs and specifications supplied by the Company. The contractors simply construct the bare body, which is delivered to the Company's shops, where the fitting of trucks and electrical equipments, car furnishings, wiring, painting and varnishing are done by the shop staff. The weight of the latest type of motor car is 20,000 lbs. fully equipped. They are constructed of teak with sheet steel panelling. The trailer cars weigh about 8,000 lbs. The British Westinghouse Company supplied the 30 horse power motors for the latest cars.

EMPLOYEES

The local officials with previous Tramway experience elsewhere, including the General Manager, number 14, and are all British.

Most of the employees are Chinese. That is to say the fitters, wiremen, painters, carpenters, turners, smiths, moulders, trackmen, traffic regulators, timekeepers, motormen, conductors, and coolies are Chinese. Among the traffic inspectors are Chinese, Japanese, Koreans and Indians. Portuguese are represented on the clerical staff.

The wages paid to the principal groups of Chinese employees are:—

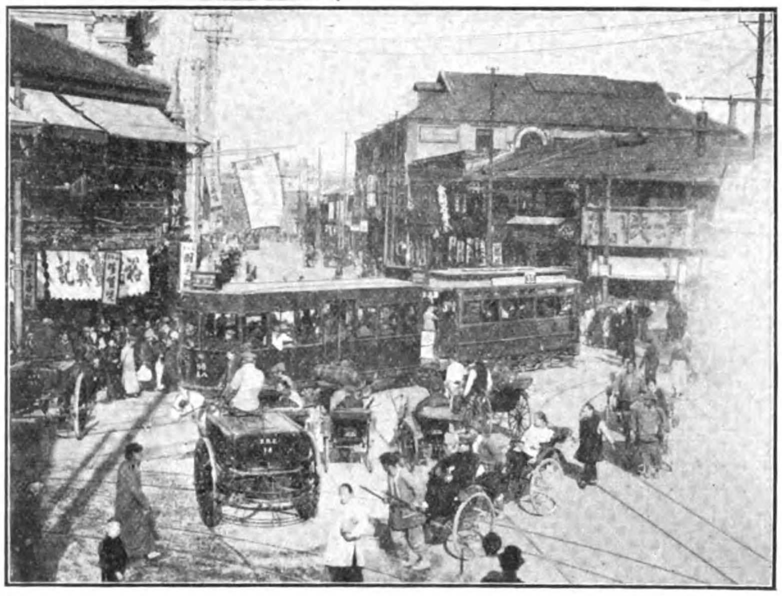
Employees	Wages per month	Employees	Wages per month
Fitters	Mex. $22 to $35	Smiths	Mex. $23 to $24
Wiremen (including electricians)	,, $23 to $45	Moulders	,, $14 to $20
Painters	,, $17 to $28	Motormen	,, $12 to $18
Carpenters	,, $15 to $28	Conductors	,, $12 to $22
Turners	,, $23		

In addition, bonuses are paid to the above employees for good service.

Coolies are paid at the rate of 30 Mexican cents per day.

There are at present slightly over 1,000 employees.

The Chinese have proved themselves very good Motormen and Conductors and, notwithstanding the difficult traffic conditions of the streets, and the enormous number of passengers carried by the Company, the record for accidents is a remarkably good one.



Foreign Settlement Trams.—Corner of Nanking and Chekiang Roads.

THROUGH RUNNING

The usefulness of the trams has been largely increased by the arrangements with the French Company for through services which came into operation in 1912 and which have recently been augmented. The arrangement has been of great advantage to the public, and it is believed, to both Companies.

THE LAST ANNUAL MEETING

It may be fitting to close this article with an extract from the speech of the Chairman of the Company, Sir Alfred Dent, K.C.M.G., at the eighth annual meeting of the Company held in London, on May 14. He said, *inter alia* :—

"The gross traffic receipts for the year amount to £117,986 10s. 5d., from which has to be deducted £25,880 19s. 4d. for loss in exchange, leaving net effective receipts £92,105 11s. 1d., against £79,783 4s. 1d. in 1912. After further deducting the Shanghai working expenses, there remains an operating profit of £37,976 4s. 10d., as compared with £27,161 9s. 7d. in 1912.

Including £1,974 5s. 6d. brought forward, the balance of net profit available, after charging London expenses and interest, amounts to £36,700 7s. 2d., against £28,028 17s. in 1912, and this we propose to deal with by transferring to reserve for renewals £10,000, to reduction of preliminary expenses £3,000, to payment of a dividend of 7 per cent. (less Income Tax) for the year £22,400 leaving £1,300 7s. 2d. to be carried forward.

"The reserve for renewals, after charging an expenditure of £95 17s. not included in the ordinary working expenses will then amount to £27,737 8s. 8d., as shown in the Balance Sheet.

"Power expenses at £10,794 5s. 2d., against £13,137 2s. 2d., show a decrease of £2,342 17s., owing to the revision of the rates. This revision, after five years, we were entitled to claim under Clause 10 of the original power agreement, and we gave notice accordingly in 1913, but the negotiations extended over a whole year before an arrangement was arrived at with the Council.

"Effective receipts show an increase of £12,227 2s., and it is a satisfactory feature that, of this amount, £10,814 15s. 3d., or 88 per cent., has been retained as operating profit. This is attributable, partly to the reduction on cost of power, and to the fact that the growth of expenses has been less in proportion to our gross earnings, notwithstanding that we have run nearly 137,000 more car miles this year than last.

"The expense ratio to effective receipts has been reduced from 65.50 per cent. to 58.50 per cent. This includes the 5 per cent. Royalty on gross receipts which we have to pay the Municipal Council, and the heavy loss in exchange. These items should be excluded when comparing our ratio with systems in other towns not similarly penalised, when it would work out at 42 per cent. for 1913, against 47 per cent. for 1912. The average expense ratio to gross receipts for all the tramways of the United Kingdom for 1912-13 is said to be 62-68.

"The loss by depreciation of subsidiary coinage during the year was equal to 23.19 per cent. of the gross cash collected, or 8.09 per cent. on the share capital, as compared with 24.55 per cent. in 1912, or 7.64 per cent. of the share capital. This shows a slight improvement per cent. in the currency itself, which I fear will not be continued into 1914, as the market is again being flooded with copper coins from the native mints, a protest against which action is being made to the Chamber of Commerce and the Court of Consuls in the interests of the Tramway Company and the trading community. This loss in exchange, as you are aware, is a new feature since the Tramway Concession was granted in 1905, and has cost us since the service has been established over £100,000. The ratio to our capital has increased from 3.63 per cent. in 1909 to 8.09 per cent. in 1913.

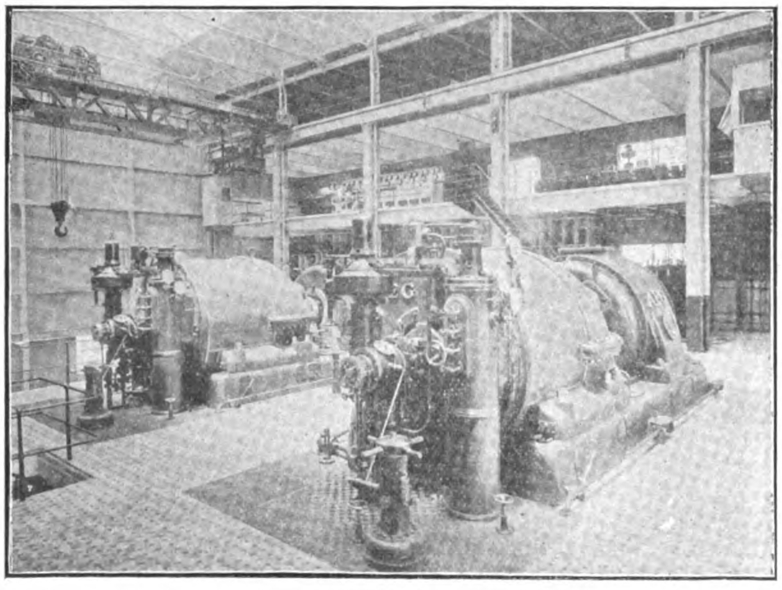
"In spite of this serious handicap, we are able this year to recommend a dividend of 7 per cent. against 5 per cent. last year. We have also set aside £10,000 to renewals account, and we have written £3,000 off preliminary expenses account. The Directors and the Auditors consider the provision for these two items as prudent, and I have no doubt Shareholders as a body will approve the soundness of this policy.

"On the general question of finance you will notice that, after providing for a considerable sum of capital expenditure, the loan from our Bankers stands in the Balance Sheet at £16,000. It stands to-day at £12,000, against which we are expecting substantial remittances from Shanghai. There is however, a further expenditure on capital account in contemplation, for which provision will have to be made when the necessity arises.

"One large item recently brought up for consideration is that of increased office accommodation. We have outgrown our present premises, and unless we can extend our present lease, and also the premises themselves on reasonable terms—which is doubtful—we may be compelled to buy land and build on our own account at no distant date. We also cannot estimate the capital requirements for the development, if thought desirable, of railless traction, as owing to the deplorable delay in delivery of cars we have not yet had an opportunity of testing how far this new mode of traction can be made applicable to Shanghai. With reference to the delay in the delivery of the cars, I have this morning received a telegram from Liverpool saying that the first two will be taken in the *Stentor* on 21st inst.

"Our traffics show continued expansion, as we carried nearly 7,000,000 more passengers last year than in 1912, and the published traffic receipts for the current year, as you will have noticed, have so far shown a satisfactory increase for every week without exception.

"We have added fifteen new motor cars during the current year; the bodies of these motors have been built in our own workshops in Shanghai, with trucks or chassis of a new type supplied by American manufacturers. We have also recently authorised the purchase of a further ten motor cars and fifteen trailers, which will bring our rolling stock up to ninety motor cars and fifty-five trailers, as compared with the original stock of sixty-five motor cars only. There will be a full use for this additional rolling stock, as we anticipate our passengers for the current year will be considerably in excess of fifty millions.



Foreign Settlement Trams.—Two 2,000 K. W. sets of the Shanghai Municipal Electricity plant that supplies the power for the trams.

"Our arrangement for through running with the French company continues to work to the advantage of both companies. The conductors are not now changed at the boundary, but separate tickets are still issued on each company's lines, a system to which the French company wishes to adhere. The French company is about to introduce through running between the French Bund and the Chinese company's line to the terminal station of the Shanghai-Hangchow Railway, and this may lead later on to an arrangement for through running between all three companies, thus

establishing a through tram service from that terminal to the Shanghai-Nanking Railway Station, adjoining our system.

"The success of the tramway companies in Shanghai, and elsewhere in China, has led to inquiries by Chinese authorities as to the possibility of starting tramways in some of their large townships, and our General Manager has been in communication with them on the subject. It may be to our advantage to interest the Company in business of this sort if obtainable on reasonable terms with adequate guarantees.

"As regards our employees (who number 974, as compared with 927 at the close of 1912), I desire to add that they have performed the duties with great credit to themselves and to the Company, especially during those weeks when the Rebellion sent crowds of refugees into the Settlement and into our cars, and at times exposed our men to danger from misdirected shells.

"Gentlemen, I have endeavoured to give you, in as few words as possible, an outline of our doings and progress, but, if further details are required, I shall be pleased to go more fully into the various reports that we have received from our General Manager, Mr. McColl, and particularly into the very able and exhaustive report that he has sent us on completing the fifth year of our existence since the opening of the system. Our best thanks are due to him, no less than to our Local Board, who do so much to promote the interests of the Company and the continued progress of its affairs.

THE FRENCH TRAMWAYS

In the French Concession the tramway system was opened in May, 1908. The lines were built and are operated by the Compagnie Francaise de Tramways et d'Eclairage Electriques de Shanghai, which has its head office in Paris. M. Marcel Coursier is the director in charge in Shanghai, with headquarters at Lokawei, in the French Concession.

The meter gauge was also selected for the French lines, and, in fact, the systems are generally similar, so that when joint through running was finally arranged in 1913 there were no difficulties of a technical nature. The first motor-cars were supplied by Messrs. Bruce, Peebles & Co., who had the contract for the rolling stock as well as for the line. Subsequently trailers were ordered from Messrs. Nicholas Tsu and Sin Fah-yung, who performed similar work for the English company. Other trailers and new motor-cars have just been received from Europe, these having been built to the order of the French company by the Ateliers de Construction de Nivelles.

The total length of the track at present, reduced to single line, is: Miles 12.50, out of which are 2.70 Mile double track. In 1912 the company had 28 motor cars and four trailers and these have been increased to 38 motor cars and 14 trailers. Direct current at 550-600 volts is used for traction. Owing to a lesser density of population and lighter traffic, the average speed of the cars is somewhat greater than on the lines in the International Settlement, while the power consumed per car-mile is about ten per cent. greater.

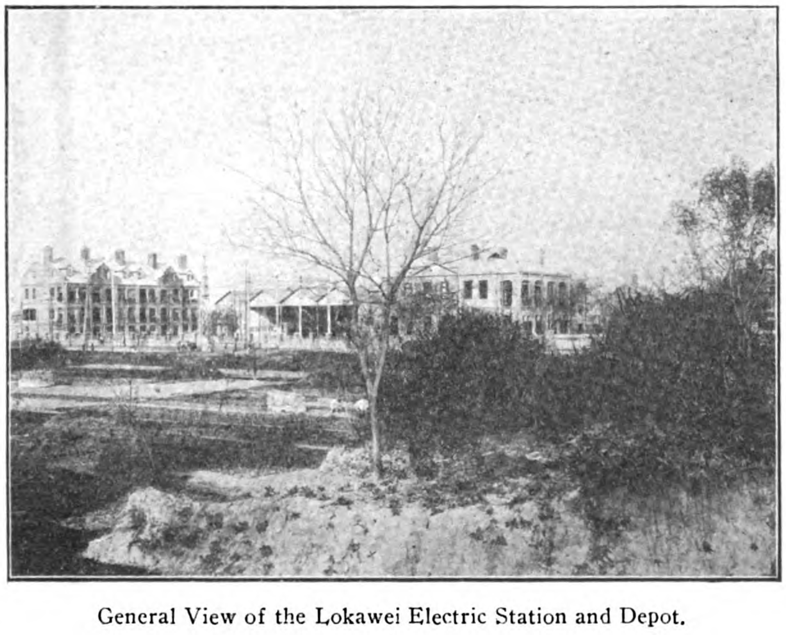
M. Marcel Coursier, General Manager of the French Tramways.

RESULTS OF OPERATION

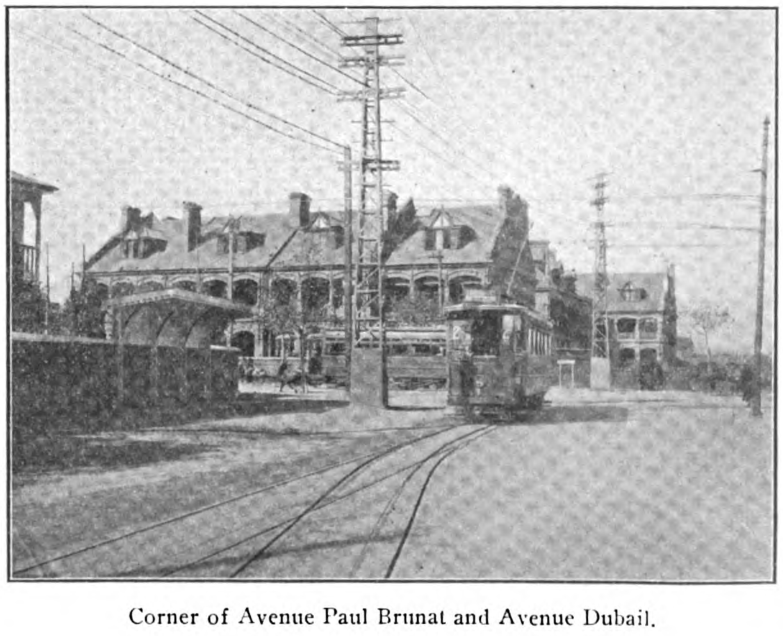
Both first and third class passengers are carried, fares being charged by sections, the rates being for first class from three to fifteen Mexican cents and for third class from one to nine Mexican cents. In 1912 the car mileage was 980,342 and the number of passengers carried 12,299,708, while in 1913 the car mileage was 1,105,000 and the passengers carried 14,778,000.

A comparison of the average number of passengers carried per day in the past four years illustrates the growth in the traffic. In 1909 it was 12,300; in 1910, 19,760; in 1911, 23,200; in 1912, 33,700 and in 1913, 40,290. The gross receipts for these years were:—1909, fcs. 303,436; 1910, fcs. 407,830; 1911, fcs. 478,373; 1912, fcs. 627,111 and in 1913, fcs. 943,000, the loss from depreciated currency not being deducted. In 1909 there was a loss of fcs. 8,667; in 1910 the profit was fcs. 96,034, in 1911, fcs. 138,283, in 1912, fcs. 240,633 and in 1913 fcs. 290,000.

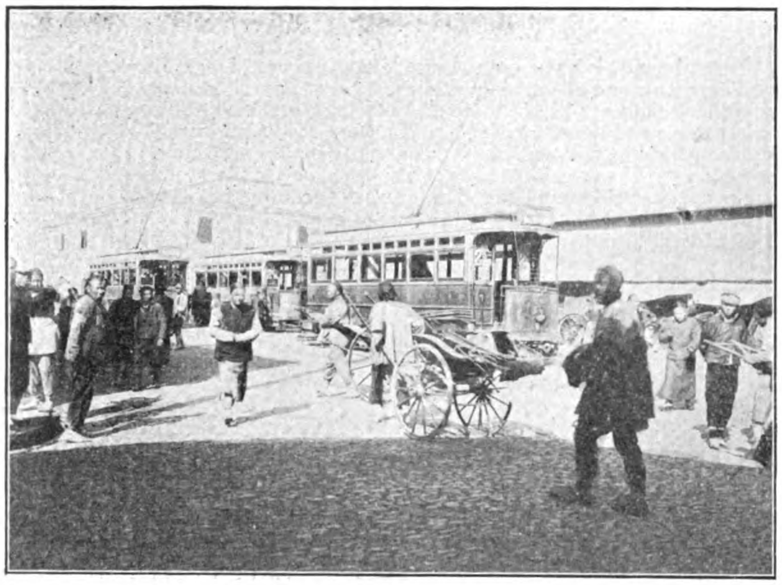
The capital of the company was formerly fcs. 4,200,000, but it has been increased as from May 10, 1914 to fcs. 8,000,000.



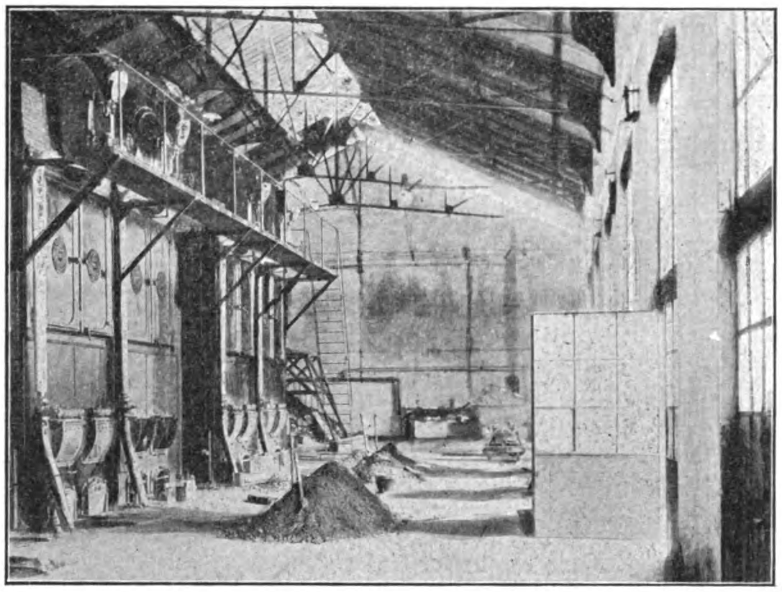
General View of the Lokawei Electric Station and Depot.



Corner of Avenue Paul Brunat and Avenue Dubail.



French lines terminus on Marché de l'est.



Electric Station at Lokawei. The Boiler Room.

A dividend of 5 per cent. on the original capital is to be paid for 1913. The reserves for sinking funds, depreciation, etc., etc., now amount to fcs. 1,164,000.

ELECTRIC LIGHTING AND WATER SUPPLY

Though not coming within the scope of this article it may be mentioned that the French company holds a franchise for electric lighting and water supply in the French concession. The returns show that there were 42,000 ten candle power lamps being supplied in 1913. Until January, 1913, direct current at 240 volts was used exclusively for lighting, but this has been superseded by an alternating current installation giving 110 volts.

POWER PLANT

Steam, at 125 pounds per square inch, is raised in four Babcock & Wilcox water-tube boilers with superheaters, hand stoking only being employed at present. The boiler-feed pumps are two Worthington duplex steam pumps and a vertical triplex power pump from a French maker.

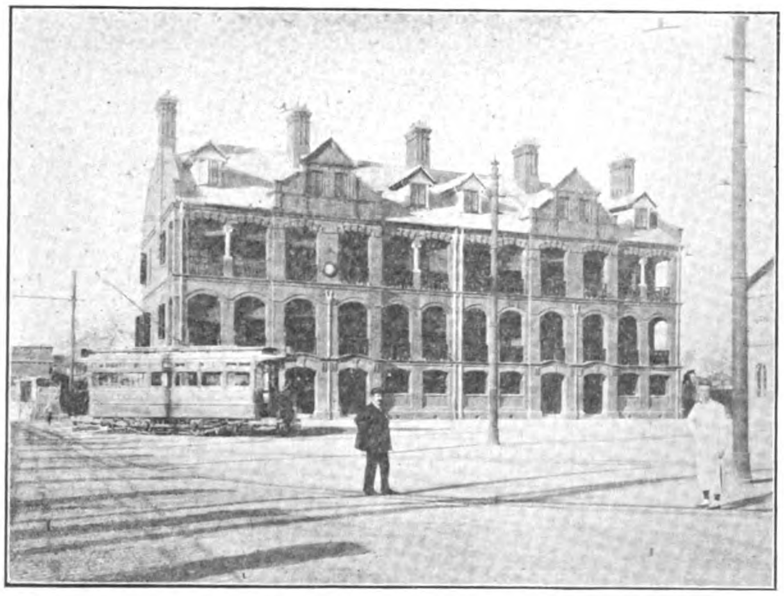
In the engine room there are four cross-compound Corliss-type engines from A. Blondel & Cie., of Lille, each direct coupled to a direct-current dynamo of 550/600 volts, from the General Electric Co., of Nancy, France. Three of the units are of 250 kilowatts, while the fourth is 350 kilowatts. The recently installed alternating current set consists of a horizontal cross-compound engine with Lenz valve gear, running at 125 revolutions per minute, from the shops of Dujardin & Cie., of Lille, with a 375-kilowatt 3-phase dynamo from the Westinghouse Co., of Havre, which is designed for 5,250 volts and 50 cycles. The French Westinghouse Co. has also supplied two motor transformers for converting a portion of the alternating current to direct current. The average cost of generating power in this plant is stated as Tls. 0.018 per kilowatt hour.

Directly underneath each engine is an independent condensing set, supplied by the engine builders. The condensers are all of the surface type, the air pumps being driven from the engine's main shaft, while motor-driven centrifugals handle the circulating water.

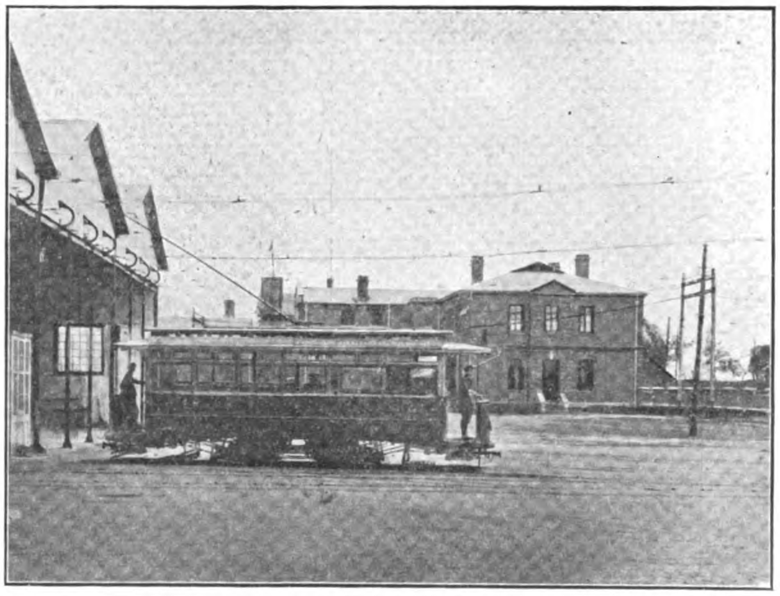
In April, 1913, the consumption of alternating current (for both light and power) was only about 100 kilowatts, as compared with 1,100 kilowatts of direct current—350 kilowatts for power, including the street railway, and 750 kilowatts for lighting. But a rapid increase in alternating current consumption set in, and the company is now planning for the installation of a 1,000, or 1,200 kilowatt high-pressure turbo-alternator set, with additional steam plant. A difficulty lies in the inadequate supply of water for the condensers, as the power plant is not near the river. At present a series of concrete reservoirs, with pipe lines and spray nozzles, is used for cooling the circulating water, but this would not be sufficient to secure the high vacuum required by steam turbines.

SHOPS

The company's car barns and repair shops adjoin the power



Dwellinghouses at Lokawei for the European officials of the French Tramways.



Lokawei—office and depot.

station, all the buildings being of steel, sheathed with either brick or corrugated iron. Only light repairing is done in the shops, which contain a very limited number of small machine tools, all from French makers.

THROUGH RUNNING

As already stated through running has been in progress with satisfactory results on the French company's lines and those of the International Settlement. An agreement has been entered into with the Chinese Tramway Company for through running not only on the Franco-Chinese system, but on several other routes as well. An arrangement has been made between the companies for a double line from Porte de l'Ouest to Porte de l'Est, which will be half French and half Chinese.

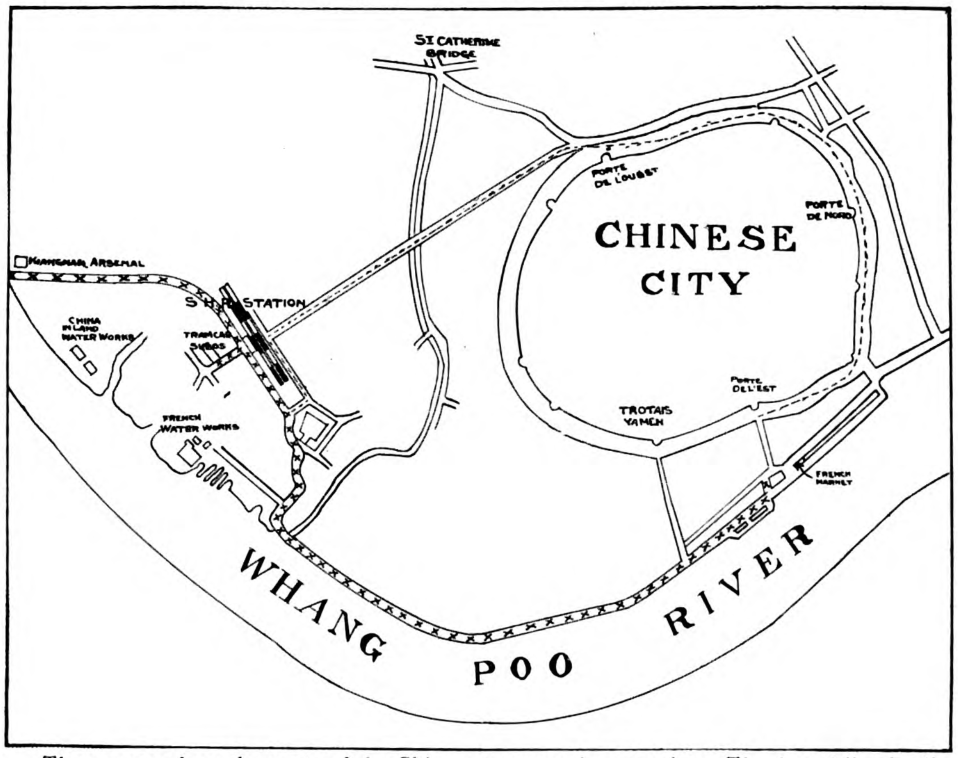
THE NANTAO TRAMWAY

The Nantao Tramway formally started its service on August 11, 1913. The occasion was a memorable one, inasmuch as this tramway was the first to be financed, built and managed, by Chinese. The only foreign assistance was that given by Mr. E. Kocher of Messrs. Siemens China Company, who supervised the work and retains the position of consulting engineer to the Company. Apart from the assistance and advice given by Mr. Kocher the enterprise has been entirely carried through by the Chinese themselves.

Nantao Tramway.—Mr. Lo Pah-hong, who formed the Nantao Tramway Company.

The Nantao Tramway Company was formed in April, 1912, mainly as a consequence of the efforts of Mr. Lo Pah-hong, who was the prime mover in the whole affair. Mr. Lo Pah-hong obtained the consent of the authorities and succeeded in interesting several of the rich Chinese residing in Nantao. As a result the Nantao Tramway Company was formed with a capital of about Tls. 200,000.

The line starts from the Marché de l'Est (in Chinese Chilopu) and runs along the Chinese Bund to the south end of the Bund. From the Marché de l'Est to Tungkadoo there is a double track. From Tungkadoo to the Shanghai - Hangchow Railway Station—the original terminus of the line—there is a single track with loops every 400 metres. The length of the line between Marché de l'Est and the Shanghai-Hangchow Railway Station is about $2\frac{1}{2}$ miles, and the extension to the Arsenal is about three quarters of a mile. There are about 32 curves in the whole line, and the rails were sent out from Germany bent into the shape required.



The crosses show the route of the Chinese tramway in operation. The dotted line leading from near the Shanghai-Hangchow Railway Station to Porte de l'Ouest and thence to Porte de l'Est shows the intended extension. From Port de l'Ouest to Porte de l'Est will be a double line operated by the French and Chinese companies.

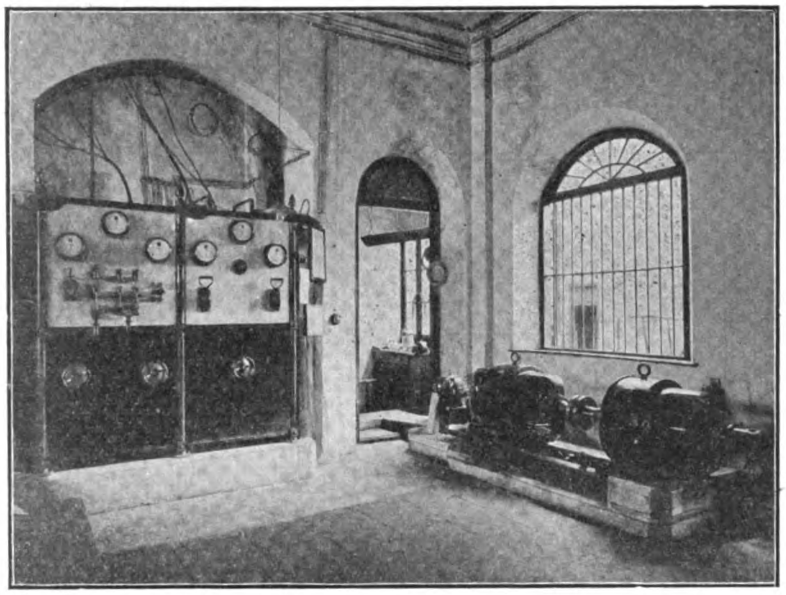
The material, rails, cars, etc., were ordered in May 1912, but the rails did not arrive until March 1913. The delay was occasioned by a fire breaking out on the steamer conveying the rails, while in the Mediterranean, and as a result the vessel was compelled to return to Hamburg. Owing to the delay thus caused the work could not be started until March, but it was finished by the end of June. It may be mentioned that the line had to be surveyed by Mr. Kocher before the order for the rails could be sent, and this work occupied some weeks. A trial run was made at the beginning of July, 1913, but the outbreak of rebellion, attended by protracted hostilities in the locality traversed by the line, prevented the formal opening of the service. The car shed was damaged during the fighting.

Nantao Tramway.—Mr. E. Kocher, under whose supervision the line was built.

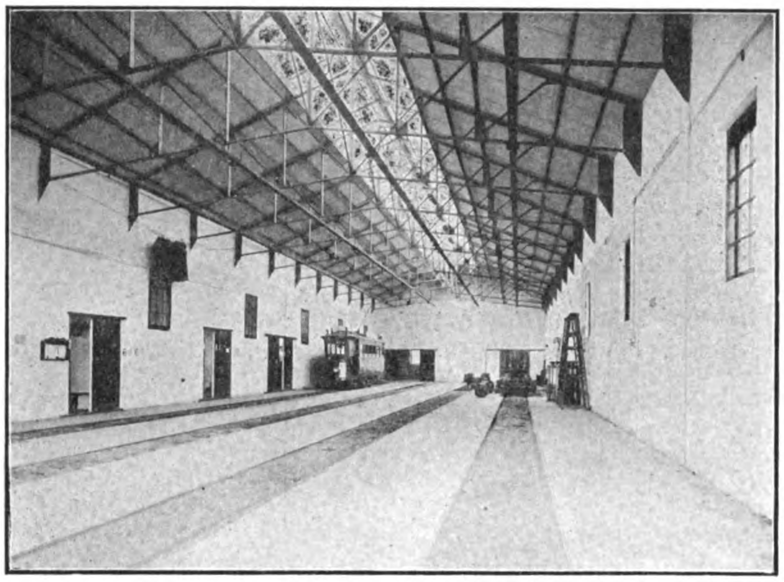
However, by August 11 conditions around Shanghai had improved to such an extent that the Company felt justified in formally starting the regular service.

THE RAILS

The rails were imported from Germany and were supplied by the Gutehoffnungshütte. They are fairly heavy rails of about 100 kilos per metre. The foundation for the rails was formed by digging a trench 500 m/m by 390 m/m, placing in the bottom large stones with pyramid points upwards, and over this placing



Nantao Tramway.—Booster and Switchboard.



Nantao Tramway.—Interior View of Car Shed.

smaller stones and gravel, well stamped down. This method of forming the foundation for the rails enables surface water to drain away, while providing for stability and rigidity. Each rail-joint is placed on a plate of reinforced concrete. The switches are made with two tongues as on railway tracks, a provision which lessens the shock to the passenger. Although the track was laid as before mentioned, to the Shanghai-Hangchow Railway Station, already an extension to the Arsenal has been made.

THE TROLLEY WIRES

For the overhead line there were employed two trolley wires of hard drawn copper of a cross section of about 55 square millimetres.

The trolley wire is supported by insulators suspended to steel wires, which are fastened, on the double track portion, to steel poles, and on the single track part are attached to brackets. About 900 metres from the Marché de l'Est the feeders are connected with the overhead wire going from the Power House, which is situated near the city wall. All the parts for the overhead line as well as for the car trucks came from Siemen's Bros. Dynamo Works in England.

THE CARS

The trucks for the cars were furnished by the United Electric Car Co., Ltd., of Preston, England. They are similar in character to those used in the trams in the Settlements. The motors, controllers and all the electrical equipment for the cars were furnished by Siemen's Bros. Dynamo Works.

The motors are designed for a maximum speed of 20 kilometres an hour (about 12 miles an hour), but the average speed is not more than sufficient to cover the distance between the Marché de l'Est and the Shanghai-Hangchow Railway-Station in twenty minutes.

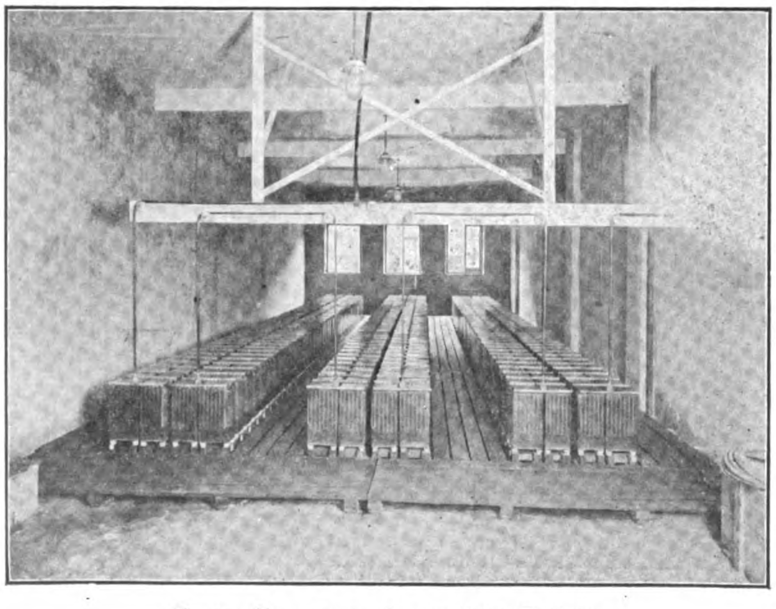
There are first and second class cars, as is the case with the French Tramway Company in the French Concession, and the car bodies are about the same. These were made locally by the Yur Sing Factory (Nicholas Tsu).

THROUGH RUNNING

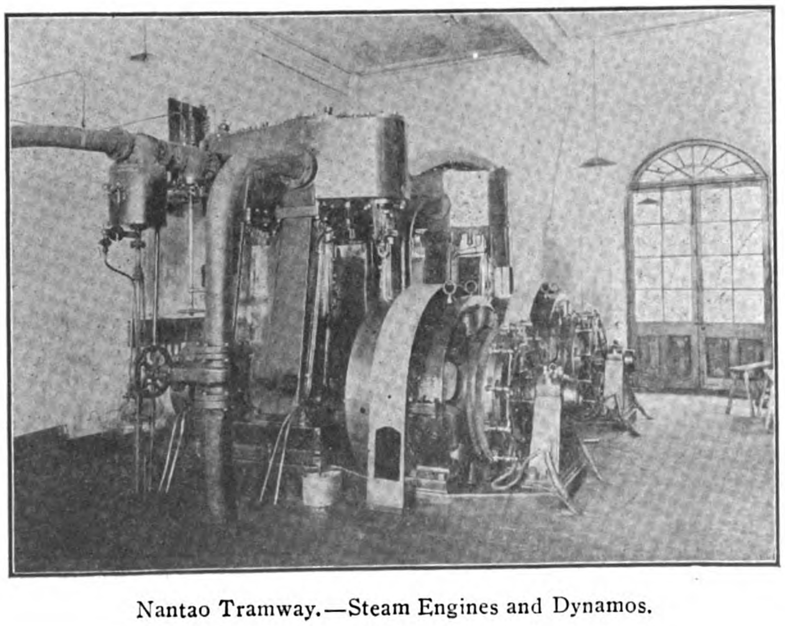
With an eye to the future, the gauge and the height of the trolley wire were made similar to what has been adopted in the French Concession and the International Settlement. This has rendered it easy to organise a through service.

CAR SHED

The car shed, which has been constructed to afford accommodation to twenty cars, is situated in front of the Shanghai-Hangchow Railway Station. It contains also an office for the traffic manager's department, repair shops, painting shops, store rooms, etc. There have now been built a large office for the managerial and clerical staffs, near the shed. The ground for the car shed is sufficiently large for the construction of



Nantao Tramway.—Accumulator Battery.



Nantao Tramway.—Steam Engines and Dynamos.

another shed of similar size and a number of other buildings. The car shed is a steel building, and was built by the Yur Sing Factory. The building was designed to give every facility for the efficient maintenance of the cars and is up-to-date in every particular.

THE POWER HOUSE

The power is supplied by the old Power Station of the Shanghai Inland Electric Light Company. It contains two engines of 100 kilowatts each, which served up to 1910 for the lighting service of this Company. In that year they were taken out of service because a new station near the Arsenal was opened. The engines were overhauled and fitted for the tramway work by adding a storage accumulator battery and booster of the Pirani-Siemens-Schükert system. The battery and the booster prevent the fluctuations of the current taken up by the cars, from influencing the dynamos and steam engines and besides that, the battery can keep the cars going for some time, in case of a breakdown of the steam engine or dynamo.

The dynamos supply a voltage of 550 volts to the trolley wire, and each engine is capable of driving from 18 to 20 tram cars on the speed at which they are run at present.

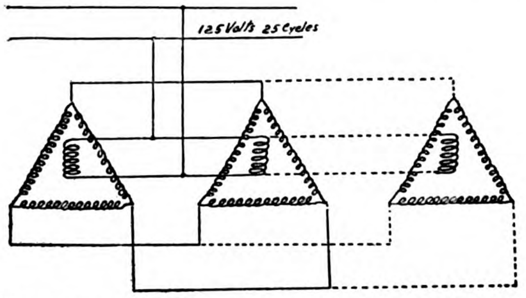
THE TRAFFIC

The traffic on the line has largely exceeded the estimates that were made originally, and the cars, especially the second class, are always crowded with passengers.

SWITCHBOARD SIGNALLING IN THE WORLD'S LARGEST POWER STATION

In the mammoth power stations of the present day, the generators are very often remote from that wonderful piece of mechanism, the modern switchboard, yet no time must be lost in transmitting instructions from the switchboard to the operator in charge of the big machines. The high standard of service maintained by the large power companies makes it imperative that the signal system for transmitting such instructions be so reliable that the probability of an error is eliminated.

In the world's largest power house, the Keokuk generating station of the Mississippi River Power Company, it is more than 800 feet or nearly one-sixth of a mile from the switchboard to the most remote generator and no part of the generator room is visible from the switchboard owing to the fact that the latter is installed in an upper story. For this reason, no efforts were spared to make the signal system as dependable as possible.



Diagrammatic representation of motor connections.

Transmitters and receivers are installed on each benchboard, the number corresponding to that of the generators controlled by it and also one receiver and transmitter is placed beside each generating unit. The left hand dial of each switchboard set is the transmitter, while the upper dial of the pedestal set is the corresponding receiver at the generator. The lower dial of the pedestal set is the generator attendant's transmitter, while the right dial in the switchboard set is the corresponding receiver.

The transmitter of the switchboard set is operated by means of a handle, pointer, and dial mounted on the front of the benchboard and concentric with the hand wheel which operates the field rheostat of the corresponding generator, the motion which sets the pointer of the transmitter at whatever signal it may be desired to transmit being communicated to the transmitter by means of a cable and pulley arrangement. the pointer of the corresponding receiver in the generator room instantly points to the same signal.

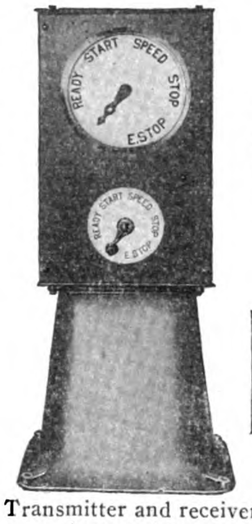
The synchronous motion of the pointers of the transmitter and receiver is secured by means of small induction motors each provided with a three phase delta connected stator winding and a single phase rotor winding of the shuttle type, the windings being exactly alike in all the machines, and corresponding dials having their signals at exactly the same points with respect to the winding.

Motors for corresponding transmitters and receivers have their stator windings connected in multiple, but not excited except by induction from the rotor winding. The rotors are also connected in multiple and excited from a single phase source. With two motors connected thus, any motion of the rotor of one is accompanied by a corresponding motion of the rotor of the other. Thus each will always bear the same relative position to its stator winding So, in sending signals, the rotor of the transmitter is turned so that the hand pointer on the dial points to the signal it is desired to send and the rotor of the connected machine or machines instantly moves around so that the hand on the dial of the receiver also points to the same signal.

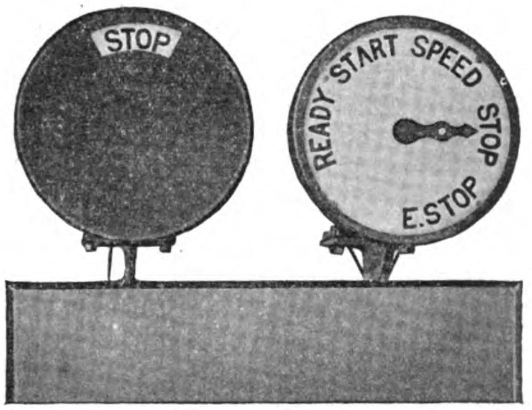
The rotors are excited from a 25 cycle, 125 volt circuit with provisions for automatically throwing them across an auxiliary supply circuit in case of failure of the main source of supply.

Double push button switches are located on both sides of the transmission handles, and serve to operate signal lamps, whistles and bells.

To send a signal, the switchboard operator turns the handle to the signal he wishes to send, this action moving the pointer on the dial of the transmitter, and, consequently, the pointer on the dial of the receiver at the generator stand, so that they both point to this signal. He then pushes a button on the right of the transmitting handle, thus lighting a lamp on the generator whose operator is being signalled to and also blowing a whistle to attract his attention.



Transmitter and receiver at generator.



Transmitter and receiver for mounting on benchboard in switchboard room.

As soon as the operator at the machine has read the signal, he turns the handle of his transmitter to the same signal, thus transmitting the signal he has received back to the switchboard operator as a check. Then he presses the button at the right of his transmitting handle, thus extinguishing the lamp and cutting out the whistle; after which he presses the button at the left of the handle so as to light a lamp in the switchboard room and ring a bell there to attract the attention of the switchboard operator, who, after checking the signal, presses the button at the left of the transmitter handle extinguishing the lamp and cutting out the bell.

This completes the sending and checking of a signal.

The devices for sending checking signals as outlined above were manufactured by the General Electric Company, Schenectady, N. Y.

MOTOR CAR SERVICE IN SOUTH MANCHURIA.

A group of Japanese residents at Pulantien are planning to form a company to start a motor car service between Pulantien and Pitsuwo. The company is to be capitalized at Y20,000 in shares of Y50 each to be paid in quarterly instalments. The departures from each end will be twice daily, the accommodating capacity of the motor car being 16, A journey between the two places can be completed in two hours.

SUMMER TRAIN RATES IN CHINA

Special Excursion Rates are now in operation over the following Railway Lines mentioned below. On the Tientsin-Pukow Railway 25 per cent. reduction on single journey rates; available till September 30. On the Peking-Mukden Line reduction tickets issued at one fare and a third to Peitaiho, Tangho and Shanhaikwan, rates available till September 30 for return at any time up to October 31. On the Shantung Railway from Tsinanfu to Tsingtau, return tickets are issued at a reduction of 25 per cent. on the Single Fares, rates being available up to September 30 Tickets can be obtained from Messrs. Thos. Cook and Son.

THE HWAI RIVER CONSERVANCY COMMISSION

On December 27, 1913, a Presidential Mandate established the National Irrigation and Water Conservation Bureau of China, with Mr. Chang Chien, Minister of Agriculture and Commerce, as its head. This was in response to a memorial from Mr. Hsiung Hsi-iing (then Premier) and Mr. Chang Chien pointing out the necessity of properly investigating and dealing with the irrigation and conservation problems with which the Government was constantly confronted. Events then began to move quickly. On January 30, 1914, a preliminary agreement was signed by the Chinese Government and the American Minister at Peking by which the American National Red Cross consented to take steps to secure the flotation of a Hwai River Conservancy Loan of $20,000,000 U.S. Currency at 5 per cent., or such sum as was found necessary after complete surveys had been made.

Soon after this agreement was signed Mr. C. D. Jameson, who in 1912 prepared a comprehensive report on the Hwai River district for the Red Cross,* left China to put the scheme before the American authorities. The American Red Cross, not being a business organization, could not itself undertake the actual financing and engineering work, but it recommended the eminent firm of Messrs. J. G. White and Co. of New York and London.

In the meantime in accordance with the preliminary agreement, the position of Engineer-in-Chief and Chairman of the American Red Cross Board of Engineers on Chinese Conservancy, was offered to and accepted by Colonel William L. Sibert. A brief sketch of Colonel Sibert's distinguished career appeared in our last issue. The other members of the Board were appointed: Mr. Arthur P. Davis, Chief Engineer of the United States Reclamation Service and Professor D. W. Meade of the Wisconsin University and a member of the Ohio Flood Commission. Mr. C. D. Jameson occupies the post of General Adviser to the Board and Mr. L. D. Cornish is the Principal Assistant Engineer to the Board. The gentlemen mentioned and surveyors (including Mr. S. T. Suen a Chinese engineer of the University of Wisconsin) arrived in Shanghai on June 28 and at once set about making arrangements for an immediate start of the survey of the Hwai River district.

The plan of operations is for the party to visit first Hanchwang on the Grand Canal. Three months are to be spent on the survey, the work being carried on by two parties of surveyors, each being apportioned a certain area.

Upon the report that Colonel Sibert makes after the surveys are completed will depend whether the work is started without delay, and its scope. Those who know the awful misery that has been caused in the immense area periodically swept by floods, will hope that this Board, composed of the most distinguished representatives of American Conservancy Engineers, will be able to recommend the carrying out of a scheme that will be of incalculable benefit to China.

* This report was published in the FAR EASTERN REVIEW of November, 1912.

KALGAN-SUIYUAN EXTENSION

Before this issue is out of the press it is likely that the large bridge carrying the railway now in course of construction from Kalgan to Suiyuan over the Yi river at Tatungfu will be completed and open for traffic. The extension is, at present, in operation to the river side, and active traffic is being carried on between that point and Kalgan. With the opening of the bridge trains will cross the river; and the station now in course of construction near Tatung city will be the present terminal. Work is, at present, being carried on to extend the line to Fengchen, 27 miles due north of Tatungfu. The road follows the river valley practically to Fengchen, and the work is mostly side cuts. There will be no tunnelling, and an easy grade will be obtainable.

At the beginning of the next year it is hoped to commence work on another section to the city of Pengtechuan. The work on this section will be somewhat difficult rock cuts, but a fair grade will be maintained.

As soon as money is available the line will be pushed on to Suiyuan, about 120 miles, and thence a further 110 miles southwards to Paotow on the Yellow River. When this line is completed it will open up large extent of territory and secure the trade which comes down the Yellow River from the Langchow region. The Ministry of Communications has given consent to a foreign loan being raised to carry out this work.

OIL STRIKE AT AKITA, JAPAN

On May 25th an important strike of oil was made at Kurokawa Akita-gori, Akita Prefecture, Japan. Work was begun on the new well early last April by the Nippon Oil Company with one of the company's up-to-date rotary boring machines. After drilling through ordinary earth and rock, to a depth of some 1,110 feet, a strata, known to oil experts as "the shell" was encountered. At midnight of May 25, the drill pierced through this shell, or crust, at a depth of 1,368 feet, into what is apparently the lead bed of an extraordinary deposit. It is from this bed that the unusual flow continues. What is most extraordinary, is the fact that the other five wells of the company in the district, which heretofore required suction pumps, also began flowing of their own accord. But the flow was so steady, and being unattended by any extraordinary force, was easily controlled. Even the flow of the new well can be controlled at any time, as it flows in a steady stream. The new well was sunk with an eight inch casing, which has been capped with a four-way head, thereby controlling the flow. The output was at first somewhat difficult to handle, as no provision had been made for such an unusual quantity. The sump at the top of the hill which had been constructed to receive the flow was soon filled and the overflow was conducted down into the upper-level paddy fields, where many hands erected a dyke around the outside of several *cho*, thus forming a very large sump.

HUGE OVERFLOW

This, however, was soon filled and the overflow was again conducted down into valley below, where another large sump was hastily constructed, enclosing several paddy fields. Four or five other sumps were then constructed on this lower level, into which the flow was directed. By means of the four-way cap, the output was reduced from 480,000 to 120,000 gallons per twenty four hour. In the meantime, the other five wells, owing to want of labor to control them, have been checked entirely. From the time of the opening of the well until the four-way cap was in place, the output was about 480,000 gallons per twenty-four hours.

NO PANIC

"Of course," remarked Mr. K. Ito, Superintendent of the Investigation Department of the Nippon Oil Company, to an interviewer "this very fortunate production will, more or less, effect the other companies in Japan but our company does not intend to create any panic in price reductions. Naturally, we intend utilizing the output to our best advantage, but do not intend flooding the marked. Nor do we intend enlarging our refineries, for the present at least- The Imperial Navy as well as the Imperial Railways are in need of oil for fuel, and this discovery fills a long felt want. Therefore, we not only consider it a good fortune to the company, but a very valuable asset to the nation as well. It is the intention of the company to dispose of the greater part of the production in the crude state, refining only that quantity which may be conveniently handled by our refineries at Tsuchizaki.

"We have no idea as to the extent of the lead-bed, but both Mr. Harrison and Mr. Wheat, who came with me from America in March, last year, and were engaged by the company as experts, are of the opinion that the flow is from a bed or lead-sand, and will continue for an unlimited length of time.

UNUSUAL SCENES

"The Company is now employing about 1,000 extra laborers and every effort is being made to secure the output. The paddy fields which are being rapidly transformed into sumps, are not of such a nature as to permit of leakage, and are therefore safe repository-tanks.

"That which struck me as being the most notable feature of the whole was the river of crude oil rushing down through the hillocks to the valley below. The capping of the eight inch casing of the well was also a scene somewhat unusual in the oil industry of this country."

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THE NEW MINISTER OF COMMUNICATIONS

When Hercules made up his mind to cleanse the Augean stables he was confronted with a task scarcely more difficult than that which has to be tackled by any one inspired with a desire to reorganise the railway affairs of China, and Hercules had the distinct advantage of being able to bend to his purpose the waters of the Alphaeus and Peneus. No such potent streams lie near the hand of the worker in Peking. Nor has he but the stalls of 3000 unresisting oxen to deal with. He has to dislodge a system which has grown in vigor with the years and which has struck its roots deep into the fertile soil of nepotism, a system which will be defended by passive resistance if by no forceful means by thousands who have lived to believe that the Ministry and all its avenues of wealth production are primarily for the good of the individuals fortunate enough to have secured a hold upon it, and only secondarily for the benefit of the State. That this condition is one of extreme gravity and of growing danger in view of the rapid expansion of the railway system is realised fully by President Yuan Shih-kai, and he is determined to effect a reorganisation before it is too late.

The changes recently brought about in the administrative systems of the provinces and the Capital—and which are dealt with elsewhere in this issue—enable the President to pay direct attention to the organs through which that administration is conducted, and while plans have been made to reorganise all the Ministries the one upon which particular interest is centred is that of Communications. In general the control of the Ministries will be changed from the present system to that which existed during the old regime. That is to say in each Board there will be a President, two Vice-Presidents, several councillors, heads of various departments, and the usual staff of secretaries. Until recently there was one Minister, one vice-Minister and, in the Board of Communications, two Directors-General, one in charge of telegraphs and one in charge of railways—the last functionary being the most powerful by virtue of his control of all the strings in the institution with which he was connected. There were also councillors, and, of course, the working staff. It is felt by the President that the old style has many advantages. Its revival will, particularly, enable him to make some sweeping changes which he would find it difficult to effect if he retained the present system, and above all it will give him the opportunity to break down a centralisation of power in an individual two or three grades lower than the Minister and replace it in the hands of the highest Official in the Board, to wit the Minister himself.

More public attention is directed to the reorganisation of the Ministry of Communications, of course, because it is the principal earning department in the control of the Government. The native press who are antagonistic to one section in the Board have exhibited an almost frantic delight in chronicling the changes that have been rung already or which are contemplated, and some newspapers have entered upon a veritable campaign of denunciation of the people whom they claim to be the leaders of the Chaotung or "railway party," Nor are they stinting in their praise of Mr. Liang Tun-yen, the official upon whom the onerous task of reorganising the Ministry has fallen.

Mr. Liang, at the urgent request of the President, came out of a retirement which has lasted from before the Revolution—when he was compelled by bad health to relinquish the Presidency of the Board of Foreign Affairs and the post of Controller-General of Revenue—to undertake the task of reorganisation which President Yuan Shih-kai desires to see carried out. He has accepted a difficult and onerous position which imposes upon him tremendous labor and the necessity of constant application in the unravelling of the numerous perplexities which are said to exist for the uninitiated in the methods which have existed in managing the railway affairs of the country. But he enters upon his work filled with optimism, and staunch in the belief that honesty of purpose will pull him through. Honesty and Integrity constitute his watchword, and his aim will be so to arrange matters that China will reap the fullest advantage from her railways.

Consistent with the desires of the President Mr. Liang has commenced the reorganisation by abolishing the Director-Generalship, and by the appointment of two Vice-Presidents, one of whom is the late Director-General of Railways, Mr. Yi Kung-cho, and the other Dr. Mark who relinquished his position as Manager of the China Merchants agency at Tientsin to accept the post. The railway work which has hitherto fallen to the Director-General will henceforth be divided into different departments such as accounts, operation, maintenance, rolling stock etc. These departments will be under special heads who will be directly responsible to the Minister. Reorganisation along these lines has already commenced and at present the Minister is endeavoring to find desirable officials to assist him in his work. That he will meet with obstacles he knows, but that he will overcome them he is certain, his faith being in the prevailing belief that honesty must eventually win the day.

Mr. Liang comes to his task well armed with knowledge and experience. His scholarly attainments in Chinese as well as in foreign learning are strongly backed up by an intimate understanding of provincial conditions and administrative needs, and these are fortified by his confidence of success. As one of the first group of Chinese who went to America in 1871 to study he entered Yale University, but before he could graduate he, with the others, was recalled in 1882 to China, though the University has since conferred upon him the degree of LL.D. and B.A. Upon his return to China Mr. Liang took up a position in the Telegraph Department at Tientsin, and during the war with France he resigned and went south, where he ultimately joined the service of the late and distinguished Viceroy Chang Chih-tung, with whom he served in the Telegraph department and as assistant to the Commisioner of Foreign Affairs. When Viceroy Chang was transferred to Hankow in August 1889 Mr. Liang Tun-yen went with him, taking up the control of the Telegraphs there and assisting with foreign affairs. This long service with the old Viceroy was of great educational value to Mr. Liang so far as Chinese was concerned, Chang Chih-tung being an eminent man of letters and the wielder of a facile and powerful pen The service, however, taxed his strength to the utmost for the Viceroy was a hard taskmaster, having no regular hours for work, performing whatever duties he had to accomplish after the day was done whenever he woke from sleep, whether it be before midnight or any hour after that to daylight. At all times he expected his assistants to be at his service, the result being that the health of many including that of Mr. Liang, became seriously affected. At the time when the Viceroy was transferred to Nanking in 1902, Mr. Liang again accompanied him, and while there was the responsible negotiator for a large foreign loan. This was his first experience in this field of work, and having set his face against commissions he refused what used to be regarded as the legitimate result of such operations, an act which was rewarded by the reduction of his salary, when he returned to Hankow in 1903, by Taels 30 per month.

With other returned students Mr. Liang suffered as a result of the policy of the old Viceroy not to give men educated abroad official rank, and it was not till the Viceroy was called to Peking in June, 1903, that he had a chance of emerging from the comparative obscurity in which he had so long labored. The advent of the late Viceroy Tuan-fang as acting Viceroy at Hankow enabled Mr. Liang to take official rank, and he was, in October, 1903, appointed Customs Taotai at Hankow, being transferred to a similar post at Tientsin in 1904 in succession of Mr. Tang Shao-yi, who was sent on a special mission to India. Sometime later he was called to Peking and in May, 1907, he was appointed Minister to America, but did not proceed, being given, in September of the same year, the post of acting Junior Vice-President of the Board of Foreign Affairs, a position which was made substantive in July, 1908. In January, 1909, he became acting President of the Board, and within a few weeks was given the substantive post, being made, in addition, the Controller-General of the Revenue Council in March, 1910. While President of the Board of Foreign Affairs it was his duty to negotiate the loan for the building of the Tientsin-Pukow railway, and he has the distinction of creating what are known as the "Tientsin-Pukow terms," a set of conditions bettering those under which China had previously floated railway loans, and giving to the Chinese larger powers over the finances and management of the railway.

The strain which constant employment and energetic pursuit of the best interests of China had caused to the health of Mr. Liang told so much upon him that he was compelled to seek relief from active work, and in July, 1910, the Throne gave its consent to his retirement. The revolution breaking out in October, 1911, Mr. Liang sought rest and recovery abroad, remaining away from China until a few months ago when he returned upon the urgent request of President Yuan Shih-kai, the post he now occupies being the first he has taken since his retirement.

The stay abroad restored Mr. Liang to health, but he has returned to resume an arduous work which might well tax it again. He has always stood for honesty in officials, and has in the handling of finances exhibited an integrity and uprightness which has puzzled many and irritated not a few. Knowing his calibre in this direction, his talents as a scholar, and his long experience under so able a Viceroy as Chang Chih-tung, President Yuan Shih-kai insisted upon him coming back into harness, and prevailed upon him to take up the most difficult post that calls for reorganisation. And at the outset Mr. Liang began to apply himself in his old vigorous way; demands of those about him upright effort, loyalty to the country, and strictly honest service; and if he secures that he will place the railway affairs of China upon a sound and business-like footing. Everything depends upon his health and strength. If his constitution will hold out he is convinced that he will triumph in the Herculean task he has ahead of him, and which is at present being watched with so much interest by all sections in Peking in particular and the country in general.

THE SINO-BELGIAN COMPANY

Belgian finance continues to be active in China. Apart from the interests taken in various railways and some industries a combination has now been effected with certain Chinese to develop the natural resources along the railway lines recently secured by Franco-Belgian capital. Those lines are, of course, the ones which have been the cause of much controversy of late, to wit, the one running from the sea across China to Kansu province, and the one from Tatung, in the North of Shansi Province, to Tungkwan and on to Chengtu, the capital of Szechuan Province. The actual extent of the arrangement made with the Chinese is not yet known, the parties maintaining what secrecy they are able to. However, it is said that the capital is to be £10,000,000 subscribed equally by Chinese and Belgians, the latter providing the moiety of the former since they are unable themselves at this juncture to supply it. Reports have it that the Company is to develop whatever mines are available; and enjoys the privilege of establishing any other industry that may seem advisable to those concerned. It is said that the arrangement does not in any way limit the areas which may be included in the sphere of operations of the concern.

This understanding is one of several into which the Chinese have recently entered. Up to a very little time ago the Chinese exhibited great reluctance to co-operate with foreigners in the development of their resources, and in cases where they were willing to negotiate they claimed equal control or full control over the affairs of the concern in which they were interested. It would seem, however, that the old prejudices are dying a natural death, and if such is the case China stands to benefit, her people having neither the money nor the experience wherewith to undertake the vast operations which will be entailed in the effective opening of the resources of the country to the use of mankind. Certainly the officials appear to have awakened to the many benefits derivable from the exploitation of China's mineral wealth, and they are apparently sagacious enough to see that China cannot of her own accord do anything tangible in this respect. It is to be hoped that all Chinese will rapidly learn to appreciate what the employment of the surplus population will mean. In the avenue of industrial effort will be found large

scope for the employment of labour; likewise it will be discovered that therein lies the secret of wealth which will enable the people to prosper and the Government to secure an abundant revenue.

A few object lessons in the shape of the establishment of well equipped and systematically conducted enterprises should be sufficient to do away with whatever prejudice may remain in the public mind. China suffers to-day because she is solely an agricultural country, but in those places where there has been impact with foreign methods the people have exhibited a remarkable aptitude in the acquirement of the knowledge necessary to handle mechanical inventions. If this can be taken as a criterion it is safe to say that China will provide in the future one of the best artisan classes to be found in the world; and this is one of the strongest inducements to foreign capitalists to venture upon the establishment of large industrial concerns. The fillip that has been given to the promotion of various enterprises bids fair to place relations between Chinese and foreigners upon a basis different from that obtaining in the past, and as consistent advocates of the adoption of a wider outlook by China we trust that the results will be highly beneficial to the country. Once the Chinese can persuade themselves to realise that they have not the requisite knowledge or experience to conduct large industrial institutions and that they must rely upon the application of foreign control, China will be on the high way to a development which will provide for her a future which has been pictured by numerous fluent pens and heralded by many eloquent friends and sympathisers.

OIL PRODUCTION IN JAPAN

Much interest is naturally being taken in the sensational strike of oil in the Nippon Oil Company's fields in the Minami-Akita district, Akita Prefecture, Japan. According to well authenticated reports the main well began to produce 390,000 gallons per day after the strike, which rose in two days to 468,000 gallons. As the yield of Japanese oil has hitherto not exceeded 195,000 gallons per day, the great importance of this new development will be readily seen. Hitherto Japan has not been able to supply her own oil-needs and has imported half the annual quantity consumed. If the present output can be maintained, and it is stated that experts are of opinion that it will be, Japan at one stride will advance from the position of a purchaser to that of a seller. It is too soon yet to appraise with accuracy the precise economic value of the development, but it is evident that it will be considerable and far-reaching in its effects.

Apart from the economic value of the strike, it is of the greatest importance from a military point of view. The increasing employment of oil as a generator of power for the propulsion of war-craft has led to the naval Powers scouring the world for new sources of supply. Great Britain only recently appropriated £2,000,000 to secure supplies from the oil-fields of Persia and it is common knowledge that that country has been endeavouring to obtain control of fields in Central and South America. Japan, like Great Britain, has hitherto been compelled to face the possibility of being dependent upon purchased supplies, but she will now be able to regard any abnormal development in the use of oil instead of coal on war-craft with equanimity.

SUBSIDIARY COINAGE IN CHINA

The main obstacle to a development of China's import and export trade has been the unrest left as a legacy of the revolution, and the consequent disinclination of traders to do business except on a strictly cash basis. But the fact must not be lost sight of that the deplorable condition of the subsidiary coinage acts in a great measure as a restraint of trade; an influence that will become still more marked as business expands. It is true that in major operations subsidiary coins do not enter into direct calculation, but in the interior, where big silver money is practically unknown, goods are bought with and sold for the depreciated local subsidiary coins. This being so it follows that this depreciation has to be taken into account when the original transactions on a large scale are made, and consequently that the constantly increasing depreciation in the value of the subsidiary coins is a matter of the first importance to the foreign importer and manufacturer. The position has been growing steadily worse and there is no indication that an improvement can be expected in the near future. Figures quoted by the chairman of the Shanghai Electric Construction Company, which operates the trams in the International Settlement of Shanghai, at a recent meeting, which are quoted in an article elsewhere in this issue, show plainly and strikingly the effect of the depreciation upon the returns of a concern which is compelled by the nature of its business to accept subsidiary coins in payment for its services. This company loses over 25 per cent. of its revenue in the process of transforming the subsidiary coins received on the trams into money that will be accepted by the banks.

In these circumstances many will feel regret that the Chinese Government talks of postponing the flotation of a loan for the purpose of putting the currency of the country on a proper basis. The motive animating the Government is undoubtedly good, but, while it is commendable to seek to prevent the burden of debt becoming unduly heavy, it may be doubted whether it is the highest wisdom to abstain from borrowing to bring into operation a regenerating influence that would be felt beneficially throughout the country. A sound currency may be said to be the basis of prosperity; at least it is evident that there can be no wide-spread prosperity when the value of the circulating medium is an unstable quantity. A reform of the currency is a matter of such extreme importance that it should be undertaken without loss of time and any indebtedness involved would be more than justified by the benefits immediate and prospective.

THE PANAMA-PACIFIC EXPOSITION.

All reports from San Francisco go to prove that the work in connection with the great Exhibition that is to open next year is being pushed on with remarkable rapidity. It has become a commonplace that exhibitions are never in a complete condition upon the day of official opening, but San Francisco is determined to show that even the greatest exhibition that has ever been held—as this will be in many ways—can be completed within scheduled time. Recent photographs, which show the Wonder City in an advanced state of development, suggest that perhaps San Francisco is not unduly sanguine.

An interesting paragraph elsewhere gives some information in regard to the exhibit that is to be made by the United States Steel Corporation and its subsidiary companies. As might have been expected the Corporation intends its exhibit to be most comprehensive. Going right back to the ore fields it will cover the mining, transportation, all intermediate processes and then steel manufacturing in its various lines. An exhibit of this kind will be of enormous value as well as interest, as increased knowledge of the greatest of all industries is likely to induce a more tolerant consideration of the problems it has to face. In these times when it has become fashionable to see in all great organizations such as the Steel Corporation a mighty power for evil, it will be instructive for the public to learn the many ways in which the Corporation looks after the safety and the material and moral well-being of its employees. This is an avenue of activity along which the Steel Corporation has proceeded far and we understand that particularly graphic exhibits are to be shown at the Exposition in this connection.

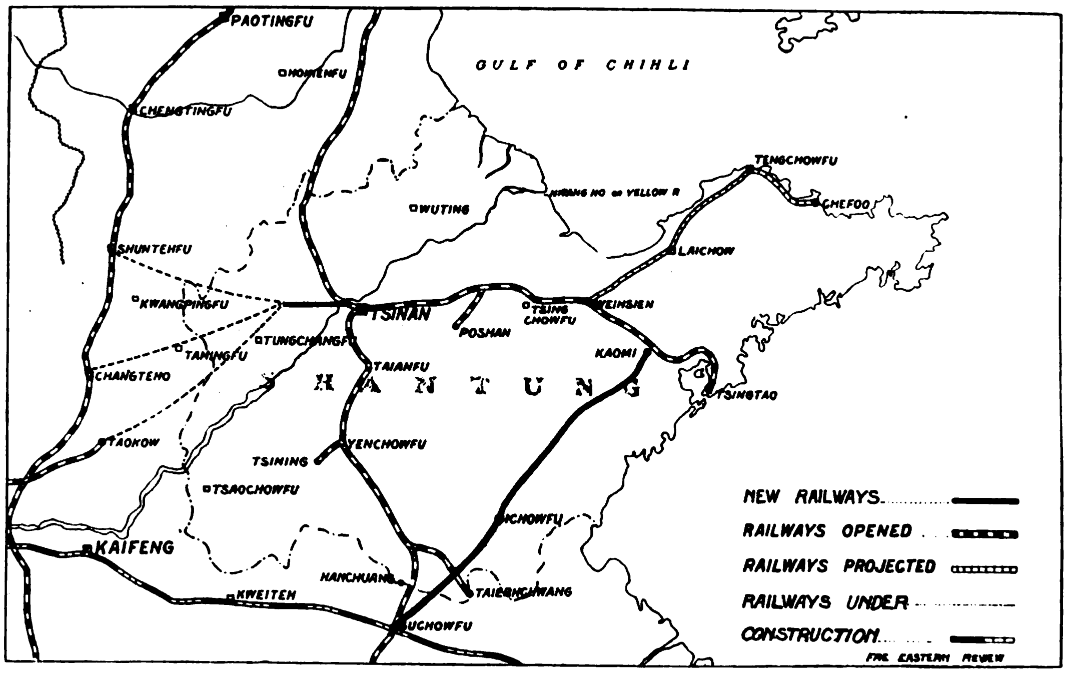
Development of a skilled staff for its new enterprises has been taken in hand by the Standard Oil Company, and many of the graduates of technical schools have been engaged to take a summer course in business and instruction, after which they will be sent to China on a contract at a very satisfactory salary. The opportunity is one which adventurous young men would naturally grasp at, and the chances for achievement somewhat parallel those on our own frontiers of some decades ago.—*Mining and Scientific Press*.

NEW RAILWAYS FOR SHANTUNG.

On December 31, 1914, a preliminary agreement was signed between China and Germany for the construction of two new railways in Shantung province, one from Kaomi, west of Tsingtao, to Ichowfu and Hanchuang, on the railway line connecting Pukow with Tientsin, and the other from Tsinanfu to some point on the Peking-Hankow railway. In the final agreement the line from Kaomi was to run to Hsuchowful and to form a junction with the Tientsin-Pukow Railway.

Under the Kiaochow Convention of March 6, 1898, China conceded Germany the right to build railways in Shantung under German Company laws, and while the railway from the port of Tsingtao to Tsinanfu was so constructed, Germany decided not to follow the same practice in the future, agreeing to forego the privileges in that direction and permitting China to build the lines upon conditions similar to those under which other railways have been constructed.

When the preliminary agreement was signed in December last this change was given effect to, and during recent months negotiations have been proceeding with regard to a final agreement to have work carried out on the railways mentioned.



The dotted lines from a point west of Tsinan show the three originally proposed routes to connect with the Peking-Hankow Railway. That to Shuntefu has now been definitely abandoned.

The final agreement, which was signed on June 24, stipulates that China shall raise a loan in Germany for the necessary money. The loan agreement has not yet been signed, but it is understood that it will grant a commission of five per cent. on all the materials purchased, or a higher sum if such be granted to others. This condition for a purchasing commission follows the precedent set elsewhere in China.

The Chief, and other engineers, will be Germans, and the Accountant staff will likewise be under the control of German experts.

When the lines are completed they will be handed over to the Ministry of Communications for operation, the control, of course, being in the hands of Germans until the loan is repaid.

The line to be built from a point on the railway west of Tsinanfu has not yet been settled as to route, and that will not be decided until after a survey has been made of the country between the Yellow River and Changteho, and Taokow, the present terminus of the Peking Syndicate railway. The final selection will of course bring about a connection between the Peking-Hankow railway and the line running to the port of Tsingtao. The idea of connecting Tsinanfu and Shuntehfu, has been abandoned.

There is a provision in the agreement that material shall be purchased from Germany.

Another provision, and an important one, is that if in the future, any railway is to be built westward of the Peking-Hankow line from the point where the German line will connect with it, Germany shall have the preference of supplying the capital.

EASTERN EXTENSION TELEGRAPH CO.

The eightieth ordinary general meeting of the Eastern Extension, Australasia and China Telegraph Company, Limited, was held on May 12, in London, Sir John Wolfe Barry, K.C.B., presiding.

In the course of his address, the Chairman said: The gross receipts for the past year amounted, in round numbers, to £738,000, against £747,000 for 1912, showing a decrease of £9,000. This result may be considered not unsatisfactory, seeing that all our local tariffs in the Far East and many of our through tariffs, were extensively and very substantially reduced during the last six months of the year under review, by which a loss was estimated to take place in the event of the traffics not immediately responding to the tariff reductions.

The full effect of the lowering of the tariffs will be felt in the current year, and it is to be hoped that the considerable reductions which have been made will in the future result in a correspondingly larger volume of traffic. Fortunately, some of the traffics which were not included in the tariff reductions showed a substantial increase during the past year, which in a large measure counteracted the effect produced by the tariff reductions to which I have made reference. Turning to the expenditure, the working and other expenses amounted, in round numbers, to £355,000, against £321,000 in 1912, showing an increase of £34,000.

Nearly one-half of this increase was caused by our cable repairs being more numerous and costly than in the previous year, and most of the remainder is due to the employment of additional staff to meet traffic requirements, automatic and other staff promotions, and to our having to provide half the cost of the new station opened by the Eastern and Eastern Extension companies at Colombo in connexion with our new alternative route to the Ear East.

Unfortunately, the cost of living in the Far East and elsewhere has, as you are doubtless aware, greatly risen in recent years, and we have found it necessary since the close of the year to further revise and improve some of our staff scales of salaries and allowances. The net profit for the past year was roundly £343,000, and after adding £27,000 brought forward from the previous year there remained an available balance of over £370,000.

The usual three-quarterly interim dividends of 2s. 6d. per share have already been paid for the past year, and it is now proposed to distribute a like amount, making a total dividend of 5 per cent. for 1913. It is also proposed to pay a bonus of 4s. per share, or 2 per cent., making a total distribution to the shareholders of 7 per cent. for the past year, and to carry forward £30,616, against £27,535 in 1912.

After making the usual additions to the maintenance, ships' insurance and depreciation funds, £130,000 of the revenue balance has been transferred to the general reserve fund, together with the value of the picked-up Tasmanian cable and stores, amounting to £17,000. On the other hand, the general reserve fund has been debited during the year with £466,000 in part payment of the cost of the new Colombo-Hongkong cables, together with £65,000 for partial cable renewals, and £77,000, representing the loss incurred on the sale of investments during the year. In other words, the general reserve fund has been credited with £147,000 and debited with £608,000, leaving the fund at the end of the year with a balance of £730,000.

Since the close of the year further investments have been realized to provide for the balance of payment for the new cables, and the loss thereby incurred will be deducted from the provision, shown in the balance-sheet, of £200,000 for investment fluctuations. At the end of the current year this account will be properly adjusted. As stated in the report, the new cables between Colombo, Penang, Singapore, and Hongkong have been successfully laid and opened for traffic, and, with the additional cables laid by the Eastern Company between Suez, Aden, and Colombo, a new alternative route to the Far East has been established viâ Colombo, which should materially assist us in efficiently dealing with increased business.

He went on to say that the revised arrangement for week-end letter telegrams exchanged with Australasia was brought into force on May 1, by which those telegrams were now transmitted *throughout* by telegraph, if it be necessary, in order to secure delivery on Tuesday morning, and the minimum charge, based on the principle of a quarter of the ordinary rate, was reduced from 18s. for 24 words to 15s. for 20 words, with 9d. for every additional word. From the same date that week-end telegram system was extended to the Straits Settlements and other parts of their service.

THE RISE AND FALL OF THE YOUNG CHINA PARTY

A SKETCH OF THE TRIUMPH OF YUAN SHIH-KAI AND THE REVIVAL OF THE OLD-STYLE OFFICIALS

During the past month or two the plans of President Yuan Shih-kai for the better control of the internal affairs of China have developed to a stage where he is enabled to take paramount command, at least for the time being. And there is no reason why his position should not be so consolidated that in the balance of his lifetime he should be able, if he so desires it, to inaugurate striking reforms in the administration of both the provincial and the Central Governments, and for the material betterment of the economic conditions upon which the prosperity of the country depend. He has now the power to do that. From the time of his acceptance of the Presidency of the Republic in February of 1912 up to November of 1913 he was opposed in most respects by the Young China party, and that opposition was sufficient, he always claimed, to prevent him carrying on the government of the country as he deemed advisable. He has now emerged triumphant over those who set themselves to subvert his rule, and in his victory he should find the way to alter many of the disabilities under which the country was alleged to be laboring when subject to the influence of the young and inexperienced students who found themselves elevated as a result of the revolution into positions of power.

His Excellency President Yuan Shih-kai.

The history of the past few years is among the most startling in the annals of the country. What is picturesquely described as the exhaustion of their Mandate from Heaven brought about the overthrow of the Manchu régime by an element hitherto not connected with the rise and fall of dynasties in China. The foreign-educated student is a product of the new time, and it was not till recent years that he was able to measure his prowess. The knowledge of foreign potentialities, a recognition of the source of foreign strength, and an appreciation of the causes of the wealth of the outer nations spurred him on to assert himself in his own land. The attempt succeeded beyond the wildest expectations, and the ease of that success combined with the wide sympathy extended to the Young China party by the outside world had the unhappy and unfortunate effect of unbalancing the leaders and filling them with such an egotism that their fall was as swift as had been their rise. They were unable to contain themselves under the seductive influences which are prone to assail the vulnerable weaknesses of mortal man who has, by force of circumstances which he has not accurately gauged, rapidly and unexpectedly climbed to the pinnacle which he has always regarded as the unattainable.

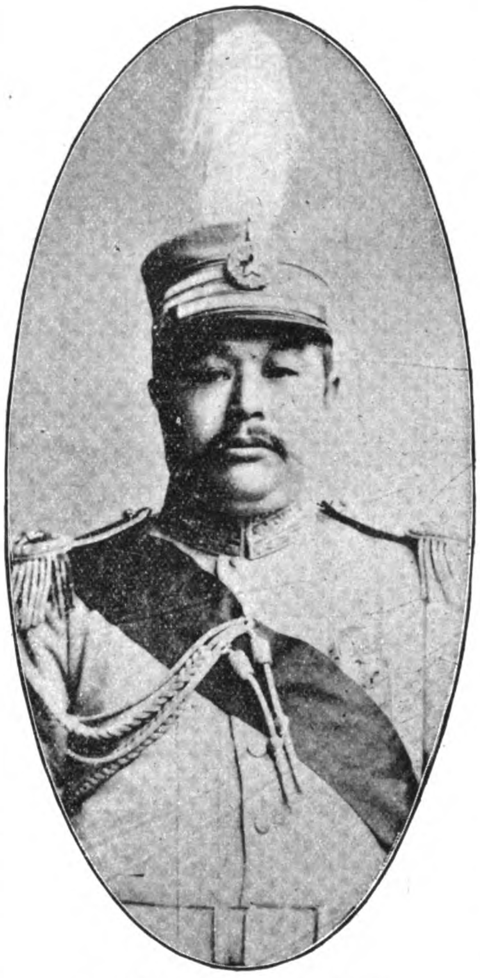
The Manchus fell because they were effete, but before they succumbed to the wave of popular feeling against them they selected Yuan Shih-kai to form, on their behalf, a Republican form of government. They armed a strong man to carry on a combat against the ultra-radical, and to restrain the impetuosities of the youthful progressives. This was naturally resented by the whole of the Young China party. When the terms were being arranged for the abdication of the Manchus the Revolutionists resisted as long as possible the inclusion of the name of Yuan Shih-kai in the Edict. For a time it was thought that the opposition would precipitate a resumption of hostilities, but lack of money, of arms and ammunition, persuaded the Revolutionists that it would be prudent to accept the wishes of those who were endeavoring to put as good a face as was possible upon a bitterly painful task. The handing over of the Presidential seal held by Sun Yat-sen was the result, and the failure of the Young China party to secure a change of the capital to Nanking, combined with the obvious intention of Yuan Shih-kai not to be bullied or browbeaten embittered them against him to such an extent that the radical element swore to unseat him, or so to embarrass and humiliate him that he would be glad to retire.

Thus commenced the tug-of-war between what was called

the "north" and the "south," the latter striving for a Cabinet form of Government through which they would be able to dominate in the affairs of the State, and for full and final control of the government of the country through Parliament. They aimed at reducing the Presidency to the feeble and ineffective position of an ornamental figurehead. Every move that could possibly contribute to prevent Yuan Shih-kai obtaining money for administrative purposes was made, while the attempts to form cabinets were futile for many months, the tension between the party cabinet faction and those who favored a Presidential system of Government being acute. With the Parliamentary elections the Young China party obtained such overwhelming gains that the Presidential party was placed in a predicament. To extricate themselves was no easy matter, but the determined set against a party cabinet was carried on to the end. One of the most active members of the Young China party, or the Kuo-ming-tang, as it was called, to advocate the party cabinet system, was Sung Chiao-jen, a man who had been frequently mentioned as the candidate of the Kuo-ming-tang for the Premiership. On the eve of his departure from Shanghai for the inauguration of Parliament he was shot and killed, and this tragic event marks the beginning of the open fight between the Young China party and Yuan Shih-kai.

THE UNDOING OF YOUNG CHINA

Who was actually responsible for that murder has never been proved. The man who fired the shot died in prison, and the man who instigated him to shoot escaped from gaol and was eventually murdered in a train while proceeding from Peking to Tientsin, in company—not under arrest—with Government detectives. The Peking party will never be able to erase from the minds of the Young China party the belief that the murder of Sung Chiao-jen was arranged in Peking, even though the principals may in no way have been involved in it. So certain, indeed, were the majority of the Kuo-ming-tang members that the murder was instigated in the Capital that they had determined to impeach the President immediately Parliament assembled, and to avert the possibility of the Kou-ming-tang securing a sufficient majority to carry out their threat the Yuan Shih-kai party commenced to use whatever money and influence they could command to form an opposition strong enough not only to frustrate an impeachment, but also to prevent the Kuo-ming-tang securing any majority on any question of importance. Thus was formed the party known as the Chin-pu-tang.



Vice-President Li Yuan-hung.

For sometime immediately before and for long after the inauguration of Parliament bribery was the order of the day. Certain members were tempted so strongly by pecuniary inducements that they wandered from one tang to the other till the procession became grotesque. The effect it had, however, was to prevent business being done. Parliament houses were the scenes of continued uproar; the President was accused of unconstitutional actions, and certainly his bold stroke of securing money by having the final agreement for the Quintuple Loan for £25,000,000 signed without reference to Parliament seemed to justify the charge; and every effort was made on the part of the Kuo-ming-tang to bring him to book. The tactics of the Chin-pu-tang were, however, bound to tell, and weeks passed without any work of moment being done. The Chin-pu-tang plan of campaign was either to prevent a quorum by remaining away, to leave the House before a vote could be taken, or to bring about a suspension of the sitting by creating an uproar. Parliament became a byword—and incidentally developed into one of the sights which all foreign tourists felt compelled to visit if they desired to go away with a record of having seen all the strange things open for inspection in the Capital.

Money was able to deprive the Kou-ming-tang of many of its members, or sufficient, at least, to prevent them ruling the Parliament. Nothing having been accomplished between early April and June, of 1913, the sober members on both sides began to realise that the Parliamentary institution would be jeopardised if they continued along the lines which had marked the first stage of the session. Agents of the Presidential party were continuously at work endeavouring to convince the radicals in the Kuo-ming-tang that their charges against the President were without substantial foundation, but their efforts met with little success. The radicals refused to be convinced, and made no efforts to conceal their intention not to elect Yuan Shih-kai as formal instead of provisional President at the forthcoming election; at the same time clearly allowing it to be understood that they would strain every sinew so to contrive a Constitution that any President would be a figurehead, while the administration would be secured in the hands of a Cabinet responsible to Parliament. A deadlock existed between the parties, but the storm of condemnation of Parliament which arose in the Press ultimately compelled serious consideration of the situation. The result was a Conference of the leaders, the selection of a committee to devise a scheme for a coalition Cabinet, and the setting down of the principle that whoever might be elected as Premier would have power to choose and appoint his own ministers. The conference decided upon a coalition with the then Speaker of the House of Representatives a member of the Chin-pu-tang, as Premier. The Kuo-ming-tang gave approval, but to their astonishment the Chin-pu-tang refused to do so on the ground that the selected Premier belonged to the smallest party forming that body and therefore had no title to the post. Internal jealousies were disastrous to the Chin-pu-tang. It had never settled into any sort of solidarity, and this exhibition of petty feeling finally prevented it doing so. The strongest element in its composition known as the Kung-ho-tang seceded as a result and effected an arrangement on June 18, 1913, to co-operate with the Kuo-ming-tang if the latter would sink their prejudices against Yuan Shih-kai and elect him formal President. This combination was of such immense importance to the future of the Young China party, meaning, as it did, absolute power in Parliament, that the Kuo-ming-tang agreed not to run a candidate for the Presidency, and left it to the members individually to decide how they would vote at the Presidential election. The moderates of the Kuo-ming-tang rejoiced at this arrangement, especially as they had secured a promise from Sun Yat-sen to withdraw from politics, and it was generally thought that a restraining influence would be exercised over the incorrigible spirits who, from the confines of the foreign settlement of Shanghai, had been murmuring revolution for many months.

While the radicals in Parliament haggled and the moderates strove to find a workable solution of the difficulties, the President was exercising himself with the provinces. In many of them the Governors were Kuo-ming-tang members who employed themselves making the proverbial hay while the sun shone. They failed to make any financial contributions to the Central Treasury, and, it is alleged, placed any surplus they could secure in a party war chest for future reference. Governors with power sufficient openly to divert public funds in this manner constituted one of the gravest menaces to the tenure of Yuan Shih-kai as President, particularly as the tension created by the murder of

Sung Chiao-jen had been increased by allegations against the President of unconstitutionality and charges of the assumption of dictatorial powers, to say nothing of the growth of the belief that he was preparing either to restore the Manchu Emperor to the Throne or occupy it himself. Setting himself gradually to eliminate the most dangerous of these officials he eventually accomplished his aim. Detachments of northern troops were quietly and unostentatiously moved to Hankow and Wuchang, the key to the Yangtsze, where the arsenal and other strategic points were occupied; and others were drafted down the Yangtsze to prepare the way for the removal of the Governor of Kiangsi province, an old Tung-ming-hui official from whom trouble was expected. Stipulations having been made that northern troops would not be advanced into the province the Governor eventually consented to give up his post—and did so. That he was prepared for eventualities is undoubted. He left for Shanghai (to return later) but hardly had he departed than northern troops are said to have moved forward contrary to promise. The Kiangsi troops fired upon them.

Mr. Hsu Shih-chang, Secretary of State.

The rebellion of the summer of 1913 having thus been developed Yuan Shih-kai was determined to mince no actions in finally placing his enemies beyond the power of further harm. Sun Yat-sen, Hwang Hsin, Chen Chi-mei, and other old revolutionaries entered actively into the campaign. They employed available troops in the Yangtsze Valley under the leadership of General Hwang Hsin, and flags bearing the legend "tao Yuan" (kill Yuan) flouted the winds from the walls of Nanking, Kiukiang, and other cities. The eventual advance of northern troops had a salutary effect upon at least one of the leaders, however, for Hwang Hsin packed his bags, boarded a steamer in the Yangtsze, and fled incontinently for Japan.

This ignominious flight struck consternation into the hearts of some of the rebels, but others kept up the fighting both at Shanghai, Nanking, and Kiukiang for some time. The rebellion was destined to fail. Yuan Shih-kai's forces pressed steadily forward and his agents succeeded in satisfying the rebel troops that it would be profitable for them to give up the struggle. Dollars rather than bullets may have constituted the strongest argument—but whatever it was Yuan Shih-kai triumphed, and put to flight Sun Yat-sen and his followers, most of whom took refuge in Japan.

Apart from suppressing the armed movement against him Yuan Shih-kai was able to range in proper perspective those who were for him and those who were against him. This, from his point of view, was a tremendous advantage and worth the struggle. He need have no further recourse to humbug. To urge him to make his victory complete various Governors in the provinces telegraphed him at once to suppress the Kuo-ming-tang party throughout the country on the ground that it was a rebel organisation, but that suggestion was not then adopted. Yuan Shih-kai had his own game to play.

Mr. Sun Pao-chi, Minister of Foreign Affairs.

The rebellion brought about the ruination of the Young China party. It was an egregious blunder, and one which, it must be emphasised, was not countenanced by the whole party, particularly the moderates in Parliament in Peking. The attitude of these members during this tremendous crisis was, in fact, the most curious spectacle confronting those observers who were without means of knowing the inwardness of the situation. The arrangement the Kuo-ming-tang had made with the Kung-ho-tang gave them a superb opportunity to gain all their ends in a thoroughly constitutional way, and it was with the greatest elation that the leaders contemplated a cessation of the constant turmoil that had marked the Parliament to this time. They

were kept in complete ignorance of the rebel developments in Shanghai for the reason no doubt that Peking was not considered safe as a repository for any secrets, and, being in ignorance, were satisfied in the belief that their efforts to convince the

Mr. Chow Tzu-chi, Minister of Finance.

Shanghai extremists of the folly of their attitude had prevailed. The outbreak of the rebellion and the immediate announcement that the old leaders, such as Sun Yat-sen, had declared themselves against Yuan Shih-kai was as a thunderbolt to them, and had it not been that their consciences were clear they would have fled the Capital in fear of the vengeance of the man their party had set themselves against, and who now, with an open declaration of war, had all the political representatives at his mercy in Peking. Yuan Shih-kai had but to send a squad of soldiers to Parliament House or to the Kuo-ming-tang headquarters to arrest the whole political section. But he did not do so for the reason that he needed the Parliament for a while longer. Some of the Kuo-ming-tang, in fear of their lives, did actually flee, but the leaders determined to remain in the Capital and attend to their Parliamentary business. The coalition with the Kung-ho-tang enabled them to hold the party together. Many of the members who had got as far as Tientsin returned, and curiously enough Parliament entered upon the most progressive part of its career to that time.

That Yuan Shih-kai permitted the Kuo-ming-tang members to sit in Parliament while he was waging bloody warfare against their comrades in the Yangtsze Valley to determine whether he or the Young Chinese were to dominate in the State, amazed all foreign observers. At any time it was expected that the President would order a general arrest of Kuo-ming-tang supporters, and to the continued astonishment of the country he refrained from doing so even at a later stage when the Constitution Committee refused to permit his delegates to enter the Temple of Heaven when he desired them to put before the Committee his wishes in regard to the Constitution. The constant reports of success or ill-success of rebel forces left the Kuo-ming-tang apparently unmoved. They gave no clue as to their feelings to any of the hundreds of detectives on the watch. So far as outward and visible signs could show no contest for supremacy might even have been thought of. Even the gradual growth of the knowledge that Yuan Shih-kai must win did not unnerve them, though when a Mandate was issued on July 22 prescribing Hwang Hsin, Chen Chi-mei and a few other leaders, thay felt that a move would be soon made to notify them that they could no longer exist as a party. The first indication that the President resented the attitude of Sun Yat-sen was given on July 24, when a Mandate was issued cancelling the authority given to him in connection with railway construction, and by the 30th the back bone of the rebellion had been broken, leaving Yuan Shih-kai virtually master to deal at lesiure with his enemies. To test the Kuo-ming-tang he issued a Mandate on August 1, giving the party three days in which to declare its policy, and to throw out from its membership Hwang Hsin, Chen Chi-mei and other leaders who had been active in the rebellion. Sun Yat-sen was not mentioned. The Mandate was complied with, and at once an anxiety became observable on the part of the Yuan Shih-kai party to ascertain how Parliament stood with respect of the forthcoming election of President. Here then was the reason for the preservation of Parliament. The Parliament had been duly elected, it stood as the representative of the people, and by it the first President was to be elected. Yuan Shih-kai had constantly professed to be constitutional, and that idea he wished to preserve to the end.

The Kuo-ming-tang, apprehensive of their future, were watching developments closely. Overtures from the Government suggested that they should agree to the early passage through Parliament of the section of the proposed Constitution dealing with the election of President, and that, combined with an understanding not to oppose Yuan Shih-kai, was part of a

Admiral Liu Kuan-hsiang, Minister of the Navy.

bargain by which the Kuo-ming-tang were able to secure that Sun Yat-sen should not be proscribed as a rebel, as others had been. The Constitution drafting Committee which was sitting in the Temple of Heaven—the Chairman and the majority of the members being of the Kuo-ming-tang—consequently rushed

through the provisions for the election of the President; the Houses of Parliament passed them, and the election took place on October 6, the place of election being surrounded with military to the great intimidation of many of the members. To the disappointment of the Yuan Shih-kai party and to the surprise of the public their candidate was not elected on the first or the second ballot, sufficiently high majorities not being available. On the third ballot, which provided that the candidate with the largest majority should be declared elected, Yuan Shih-kai was returned as President, Li Yuan-hung receiving 179 votes and others lesser numbers. The tenacity with which some of the extremists held to their views and refused to cast a vote for Yuan Shih-kai was not lost sight of, and their attitude in Parliament subsequently was closely watched.

Though elected to the first position in the land Yuan Shih-kai did not control. The Parliament stood between him and effective dominance, and Parliament still showed a disposition to adopt a Constitution which would tie his hands completely. How to overcome Parliament was the puzzle. The members were behaving themselves well, business was being transacted, and the general air was one indicating a certain permanency. An attempt was made in the appointment of the Cabinet following the Presidential election to induce Parliament to throw out the nominee for Premier, in order to give an excuse for strong action by the President, but the Kuo-ming-tang were aware of the scheme and accepted the first Premier nominated with an overwhelming majority. This saved the Parliament for some time, but it had to go, and the only course open to the President was to assail the Kuo-ming-tang as rebels and remove them. Various Governors in the provinces once again despatched telegrams urging the suppression of the Kuo-ming-tang members, and though it was long after the rebellion evidence mysteriously arrived from somewhere purporting to show that members of Parliament had been actively connected with the movement. On November 5, therefore, Yuan Shih-kai brought off his coup by publishing a Mandate declaring the Kuo-ming-tang to be a rebel organisation, expelling the members thereof from Parliament, and ordering the abolition of the party throughout the country. Every member of the Kuo-ming-tang was visited by the police, their Parliamentary badges and certificates being taken. Great care was observed not to have members forcibly dealt with, and the coup was carried through without mishap.

General Tuan Chi-jui, Minister of War.

Before they were aware of it the Young China party in Parliament were deprived of their power, and incidentally Parliament was destroyed. No quorum could be found, and though efforts of a strenuous character were made by the surviving parties to have the election certificates of certain members returned their importunities availed nothing. Yuan Shih-kai had struck, and he was not disposed to relent.

With the Kuo-ming-tang downfall also collapsed parties who had assisted the Presidential party to accomplish their aim, and though much energy was expended in an endeavour to save the legislative institution from the wreck by having the reserve members from the provinces brought up it was discovered that most of those were also members of the dissolved party. Gradually the painful realisation dawned upon all sections of the Young China party that they had played their last card in the present game. Nor were they permitted to remain long in doubt as to what the attitude of the President would be towards them. The police became excessively active throughout the country. Thousands of detective were employed to hunt down rebels. Executions were numerous—and swift. A reign of terror lasted for many months, and, it is alleged, as many innocent went to their deaths as guilty. The agents of the Government were out to strike terror into the hearts of all who might think of revenge.

Until April of 1914 these conditions obtained, and an amnesty was only granted then as a result of an outcry in the foreign papers published in China against the wholesale executions of guilty and innocent alike. The aims and ambitions of the Young China party who rose with the revolution were thus frustrated, and Yuan Shih-kai, the man they hated, but regarded cheaply, was left triumphant to control China according to his own lights and without the assistance of any of those who believed that upon their talents depended the future of the country. Of the elements who contributed to this swift submersion of the Young Chinese the Japanese returned students stand foremost. Among them were the radical revolutionists. The students from Britain and America mostly endeavoured to exert a restraining influence but it was scornfully rejected and therefore unavailing. The Japanese educated students possessed the little knowledge that is a dangerous thing, and added to that was a largely developed spirit of self-seeking and lack of patriotic motive that over-rode the saner counsels of the better educated and wiser members of their party. The handicap was too great for the party and it fell a victim to lack of far-sighted, wise, trained, and commanding leaders; to a general overweening conceit; to a false estimate of its own power and importance, and above all to a sad lack of experience both in rank and file.

OLD STYLE REDIVIVUS

The downfall of the Young China party, wrought as it was by the suppression of the Kuo-ming-tang and the dissolution of Parliament, placed Yuan Shih-kai in full and absolute command of the Central Government, and gave him the opportunity for which he had long been waiting to inaugurate a system of provincial administration which would in his judgment guarantee the fullest measure of control from Peking. For the previous two years no progress had been made; financial affairs had become so deplorable that bankruptcy stared the country in the face; no organisation in any department could be carried on, and uncertainty among the officials caused an unrest that was demoralising. To the activities of the Kuo-ming-tang were ascribed these unsatisfactory and dangerous conditions. Certainly the Young China party consistently opposed the reappointment of officials whom they regarded as reactionary—and certainly, too, the President showed as consistent a disinclination to place in positions of power any of the returned students, mostly, he argued, because their western learning compensated in no way for their lack of experience of the conditions in their own country or for their lack of knowledge of the methods best calculated to govern it successfully.

The tendency of Yuan Shih-kai was always to fall back upon the men of the old time who, in his judgment, could alone

render effective service. Rightly or wrongly he set himself against the employment of theorists who failed to realise that China was not ready to have imposed upon it forms of administration which had developed in foreign countries only after years of systematised application. To a greater or less extent the foreign Legations in Peking sympathised with the President in this respect, though they looked to him for a progressive policy rather than a reactionary one. This he repeatedly promised to carry out, contending that the only way effectively to do so was to reinstate in all high positions the old officials who had been trained to the work what time they absorbed that peculiar knowledge of their countrymen so essential to possess if efficient government is to be maintained over them. With this idea, naturally, the Young Chinese are in the strongest opposition, but the moderates among them are now content to make a virtue of necessity and permit the President to have a free hand to demonstrate that his contentions are correct.

The sight of a Parliament, unwieldy in numbers, and filled with energetic youngsters clamouring for a new order in customs as well as in Government was a constant source of irritation to Yuan Shih-kai. To root it out while still professing a desire for popular representation of the people was his most difficult task, but to extirpate it he was determined. He was fully aware of the measure of distrust evinced towards him by the Young China party, and realised that if they succeeded in gaining a hold of the legislature his powers would be shorn to the last limit. Yuan Shih-kai is not the man to accept a curtailment of authority from the section which he is still prone to regard as juvenile, and since the Young Chinese were openly bent upon his downfall he felt it incumbent to safeguard himself, firmly believing that it was for the best interests of China so to do. The fight that ensued between the Chin-pu-tang and the Kuo-ming-tang in Parliament, and which culminated in the abolition of the latter, was the fight between Yuan Shih-kai and Young China.

From the time of his assumption of office Yuan Shih-kai was desirous of surrounding himself with the old officials whom he had known in previous days, but hedged in as he was with certain obligations to the Young China party he was unable to do so. Every time the name of an old official was mentioned for a position the political heavens were shaken by screams of violent disapproval. The endeavour of the President to secure trusted henchmen in the Cabinet was futile—Parliament would have none of it. Long ago Hsu Hsih-chang, the present State Secretary, was mentioned as possible Premier. The mere suggestion of such a thing made the Young Chinese see red. The Cabinets which Yuan Shih-kai worked with up to the time he secured his freedom from the thralls which the revolution imposed upon him were the nearest approach to his desires that the Young Chinese would tolerate. None of them suited Yuan Shih-kai and the constant changes in Premiers and Cabinet Ministers is therefore explained.

Had it been possible the Premier and some of the Cabinet who were in power when Parliament was dissolved would have been thrown out simultaneously, but the President was not certain how such a sweep would be viewed by foreign countries to say nothing of China itself. Through that Cabinet he did vainly essay a change in the provincial administration, and made plans for the drafting of a new constitution to enable him to rule instead of be ruled in the future. Always the Government were appealing to the provinces for financial contributions, but the response was negative; while Provincial Assemblies existed the Governors were unable, however willing, to forward remittances, and Yuan Shih-kai felt it absolutely necessary to abolish them. Strangely enough the provinces remained quiet under this wholesale demolition of the organisations which they had cherished as the material evidence of their liberty and independence. The explanation is the desire of the people for peace in which to continue their occupations, and the destruction of the revolutionary weapons held by the extremists in the Young China party.

Yuan Shih-kai pursued his policy of clearing away obstructions by gradual stages. With Parliament and Provincial Assemblies out of the way he revived the worship of Heaven and set to work to devise a "provisional constitution" giving him a wide power of ordinance and an absolute veto. On May 1 the compact was promulgated. It provides that the President, as the head of the nation, shall have the controlling power of the administration; declare war and conclude peace; convoke or dissolve the Li Fa Yuan, or legislative body, with the permission of the Tsan Chen Yuan, a Council of State comprised of Presidential nominees; appoint and dismiss civil and military officers, and above all be the Commander-in-chief of, and control, the army and navy, with sole power "to decide the system of organisation and the respective strengths of the army and navy." The Constitution makes provision for a Secretary of State "to assist the President," it being laid down that the Ministers of the various Boards are simply to control affairs "in accordance with orders," and it also revives the Censorate, which may impeach the Secretary of State or any of the Ministers "when they commit a breach of law."

Mr. Chang Chien, Minister of Agriculture and Commerce.

In a long Presidential statement explaining the reasons which made a revision of the provisional constitution necessary it was declared that the inspiration was due to telegraphic suggestions from various governors in the provinces, and was emphasised by the damage done by the members of the previous Parliament in "cutting the foot to make the shoe fit." As is usual in such cases the President expressed the fear that in his "old and incapable" age the duties "imposed upon him" may be

too great, but expressed a desire not to shirk them as this is "not the time for any person to be selfish."

With this desirable constitutional compact in hand Yuan Shih-kai introduced Hsu Hsih-chang as State Secretary and remodelled his Ministry, only one of them, Tang Hwa-lung, having been actively connected with the revolution. He, however, was the head and front of the Chin-pu-tang, which party accomplished so much for the President, and it was only fitting that he should be rewarded by being appointed to be Minister of Education at least. The remainder of the Ministers were all of the old school, most of whom had worked with the President in the past as well as in the Cabinet which controlled affairs from the time of the dissolution of Parliament, and all possess the desirable attribute of thoroughly understanding the necessity which exists for the Presidential will to prevail.

The President, being now in supreme power, laboured to perfect the plans he had long conceived properly to adjust matters between Peking and the provinces. The habit which the provinces had got into of disregarding the wishes of the Capital and ignoring the financial needs of the Central Government had to be corrected. A separation of civil and military affairs was immediately desirable and to this end a Presidential Order was issued on May 23, virtually reviving, but modifying, the system of provincial administration existing in the time of the Manchu régime. Under it the Governors will carry out the administration of civil affairs with supervisory powers over finance and judicial matters. The old finance departments were abolished, and new ones with orders direct from Peking were created with the object of firmly, and finally if possible, securing a steady flow of revenue to the Central Treasury. If this be accomplished Yuan Shih-kai will have overcome one of his chief difficulties, and will smooth the way to a maintenance of his control over the country. Upon financial reform hinges the future of China. The troubles of the past two years so far as the Capital is concerned have been based upon the cessation of contributions from the Provinces. In the old Manchu times Peking regularly secured from seventy to eighty million taels per annum—a sum which dwindled after the revolution to nothing, and only quite recently revived to at most two million dollars. During the past two or three months, however, the dominance of Yuan Shih-kai has produced a remarkable fillip, and last month seven million dollars came in, giving a surplus of some three million over the needs of the Central Government, which average about four million dollars per month. This result encourages the belief that with the introduction of the new provincial system, or rather the revival of the old system, the income from the provinces will be brought to its old level within a very few months if the popular mind is not disturbed by any forcible reaction likely to deter the taxpayers from paying their dues. Yuan Shih-kai has, of course, always pleaded that he was compelled to place the Young China party *hors de combat* to enable him to bring about a restoration of the finances, and on that ground he has received the sympathy of the foreign Legations. His justification will undoubtedly be ample if he succeeds in restoring financial conditions without jeopardising the peace of the provinces, and particularly if by a progressive policy he is able to place trade and commerce upon a sound footing,

Insofar as the military is concerned the forces will now be under the control of the Ministry of War, who will be represented in the provinces by special Commissioners. The High Intendant will have no authority over the troops, although he will have the direction of the police and patrol forces, and should the necessity arise at any time for the employment of the military he must apply to the nearest officer in the vicinity for such aid.

Each province will be divided into Tao or Circuits, and Hsien, or Districts, to simplify administration, the officers in charge of each being under the High Intendant of the Province. The control of all these officials will be with the President since it is laid down that the Governors shall not receive instructions from anyone but the President, the various Ministers having been notified that they may not give any orders to any Governors, their connections, if any, being strictly limited to exchange of despatches. Patronage is thus to the widest degree retained in the hands of the President, and the many posts in the provinces will be filled by officials upon whom he can place reliance. Already many old servants of the Manchus are finding their way back into familiar positions in the provinces, as well as in metropolitan circles.

Mr. Chu Chi-chien, Minister of the Interior.

Following the promulgation of the provincial administration system there came out on May 24 a Presidential Order setting forth the rules and regulations of the Tsan Cheng Yuan, or Council of State, a body designed as a kind of Advisory Council. Its members will be nominated by the President, and their duties will be to "attend to the enquiries of the President, and discuss administrative affairs." The matters upon which they may deliberate are stated as "explanations on doubtful points in the Constitutional Compact and all other laws in connection with the Constitutional Compact; and disputes between the executive and judicial departments over the definition of authority," while the President may address enquiries to them and obtain their opinion upon the conclusion of treaties, the establishment of administrative offices, the reform of the finances, the development of education, and the expansion of industry. They will have no legislative powers, though they may make suggestions to the President if any Bill containing such is signed by at least ten members. The Chairman and Vice-Chairman shall not be elected, but shall be specially appointed by the President, and the members numbering from fifty to seventy shall also be appointed by the President from men who possess one of the following qualifications—"Those who have rendered meritorious service to the nation; those who possess technical knowledge in law or politics; those who have administrative experience; scholars of profound knowledge who are authors of works which are of public utility, and those rich in experience and knowledge of industry."

This body is then solely and wholly a Presidential organ, and while there was much speculation upon the promulgation of the regulations as to the character of the members who would be selected to compose the body the public was not left long in doubt. On May 26 the "Government Gazette" contained the names of the nominees, who were headed by General Li Yuan-hung, the Vice-President and hero of the Revolution, as Chairman. There were seventy of them, all savouring of old times. Classified in seven groups they represented officials with metropolitan experience, such as Grand Councillors, Presidents and Vice-Presidents of the old Boards, officials with Provincial experience such as Viceroys, Governors and Treasurers, Ministers who had served in various countries abroad; old representatives of the army and navy; old officials with knowledge of law, of commerce, of industry, of literature. Others have served Yuan Shih-kai since the establishment of the Republic in capacities such as Military or Civil Governors of Provinces, while a few were members of the late Parliament. Among them are no Young Chinese.

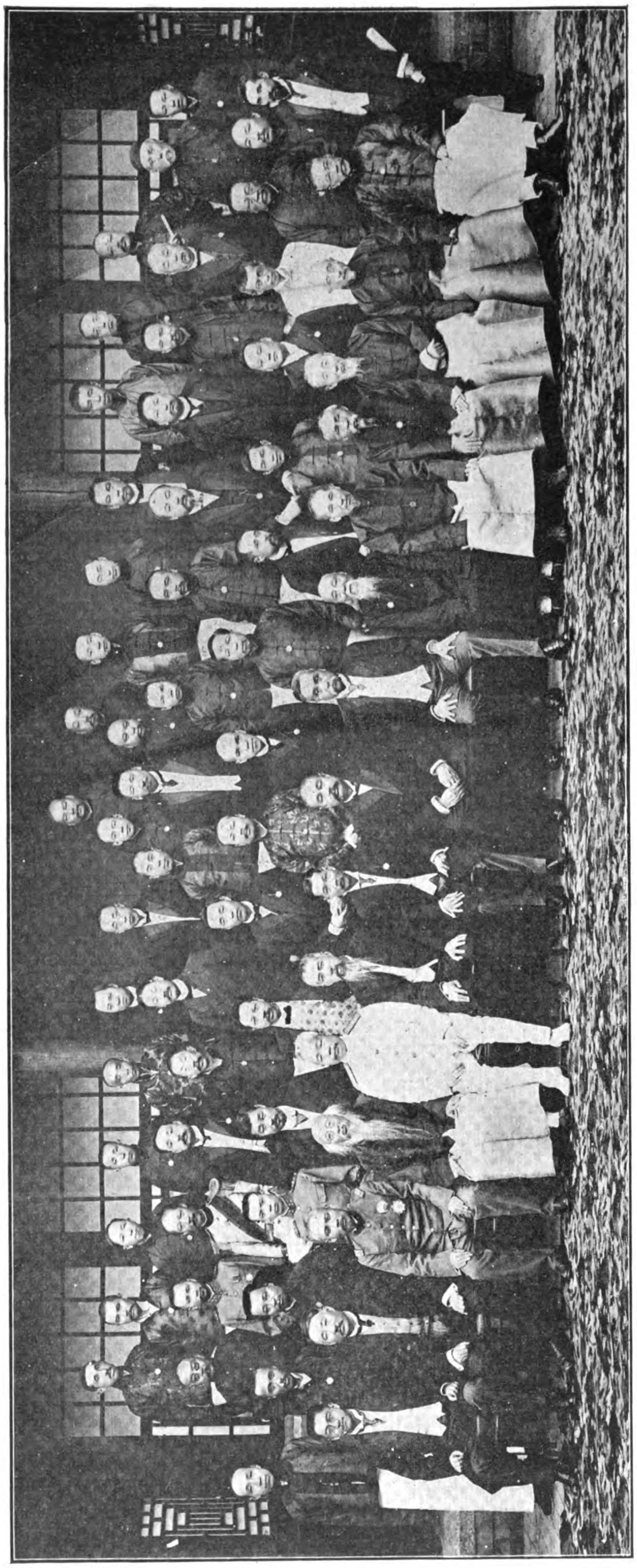
In the judgment of Yuan Shih-kai these are the only men who can assist him to place the country on its feet, and he chose them, a high official recently affirmed, because they are the only ones through whom reforms can be carried out. A dictum which sounds strange to the ears of the Young China party who worked in the revolution to throw them out of office as obstructionists.

The regulations for the Li Fa Yuan, or legislative Chamber, have not yet been promulgated by the President, but a draft of them shows that the members will be partly elected and partly appointed. Every hsien or district will elect ten candidates who shall be nominated by the Magistrates from among the natives of the districts. Five of them shall be the wealthiest persons in the district while the other five shall be nominated from among such classes as have had long administrative experience, a knowledge of law, or are scholars. Or failing sufficient possessing these attributes their places shall be taken by men from the propertied class. These ten candidates shall assemble in the District city and shall choose from among themselves one elector, who shall proceed to the Provincial Capital and there with others similarly chosen shall elect as members of the Li Fa Yuan one-tenth of their number. The President retains the right to appoint, in addition to the elected members, one-tenth of the total number of the Li Fa Yuan, while each Provincial Governor will be entitled to nominate two members. The territories of Mongolia, Tibet, and Ching-hai will have representatives elected according to special regulations, and the total number of members will be about 300.

These regulations contain ample safeguards to prevent any disturbing or undesirable element from creeping into the body. They are designed, of course, to shut the Young China party out, and if the scheme can be consummated the President will have a so-called representative organ under his control which will do what he wishes without unseemly conflicts such as have marked the preceding Parliaments. It is possible that this organisation may develop into one which will be able to hold the respect of the people, and if it does the ultimate transition into a purely representative body should not be difficult.

With the completion of the organisation of the so-called Parliament the President will signalize his triumph over the Young Chinese and will be free to proceed with the reorganisation of the country upon the lines which he claims will alone bring China to a continuously progressive stage. He has deemed it wise to revive the worship of Heaven at the old

THE COUNCIL OF STATE



This photograph of the Council of State was taken on June 20 just after the inauguration. The Chairman of the Council, Vice-President Li Yuan-hung, is in the center of the bottom row. The Vice-Chairman, Mr. Wang Ta-hsieh, is sitting on his right-hand side and Mr. Hsu Shih-chang, Secretary of State, on his left.

altar where Emperors have for a long years accounted for their stewardship, and this year Young China will, all being well, witness the President of this newest of Republics recounting to Heaven the steps he has deemed it prudent to take to keep the country intact for the enjoyment of the brethren of the five races and the benefit of mankind. And meantime foreigners will watch with great curiosity the development of his plans to see whether they will retard rather than promote the interests which they are specially desirous of forwarding in the country.

INAUGURATION OF THE COUNCIL OF STATE

On June 20 the Council of State was inaugurated with some show of pomp and circumstance at the building formerly occupied by the Senate. There were 45 members present, out of the 70 nominated, including the Chairman, General Li Yuan-hung, the Vice-President of the Republic. The Secretary of State, Mr. Hsu Shih-chang, represented President Yuan Shih-kai and read to the gathering the address of the President. It pointed out to the members what the President deemed the organisation to be.

"It is feared," he wrote, "that my observation and experience are insufficient, therefore the Tsan-Cheng-yuan is inaugurated as an organ of inquiries......and it is also intended to take temporarily the place of the Li-fa-yuan." This means, some Chinese newspapers declared the next day, that the creation of the legislative organ will be delayed several years. The President, however, has declared otherwise, but in the meantime the Council of State is the only body functioning, and the people will join with the President when he said in his final sentence—"I rub my eyes to witness the merits which will be achieved."

The Chairman, in his address, remarked that "by the blessings of God the hope of our people has been realised; the turmoils have again subsided and things have returned to their normal course," and in eulogising the merits of the President, added—"with regard to the introduction of systems or reform it is but right that all should be decided by him as the ore should be melted by the furnace." He recounted how, "before the rebellion in the South was suppressed, the National Assembly was split into several parties engaged all the time in quarrelling," and explained that as this state of affairs could not last "steps were adopted to dissolve the Kuo-ming-tang, and, when there was no quorum for the Houses the function of the National Assembly was suspended." General Li Yuan-hung placed the onus of this action upon the shoulders of the Assembly itself, but added that unity was impossible owing to the number of members being too large. Then he further explained the powers of the Council of State, declaring that "this Yuan is to form an organ of inquiry, with power to pass any questions, and before the establishment of the Li-fa-yuan—or Legislative Organ shall have the authority to act as a legislative body," added that as this power had been given it showed "the sincerity of the Government in maintaining the Republican form of Government."

The Tsan-cheng-yuan was thus inaugurated, and its first business meeting was fixed for June 24. Should the body wisely demean itself it should be distinctly helpful to the country, but it would be folly to prophesy anything more than the only thing it is safe to prognosticate in China—"we shall see what we shall see."

THE SECRETARY OF STATE EXPLAINS

In an interview which the writer recently had with Mr. Hsu Hsih-chang, the Secretary of State, it was explained that officials of the old régime were being called back into power merely "to show the young men how to manage administrative affairs so that, eventually, the young men will be able, by the experience acquired, to take charge of these matters themselves. The young men will be given every chance to acquire experiences. The Secretary of State scouted the idea that the revival of old officials meant a revival of old customs. The Government, he declared, intended to pursue a progressive policy; one which would make for the betterment of conditions in the country.

"The object of changing the administrative systems was two-fold," he said. One was to place financial affairs upon a proper basis, and the other to try to reduce the number of troops. Within two years the Government hoped to have the finances upon a basis equal to that of the most prosperous times of the old régime and a few years later to have them more prosperous.

"Disbandment of troops has been proceeding slowly for the last year, but the urgency of suppressing bandits who had arisen in various parts compelled the employment of more troops than otherwise would have been necessary. When the bandits are overcome, the reduction of the number of troops will be carried out more rapidly and more regularly.

"The system of administration now adopted in the provinces is an improvement upon that which obtained under the old régime. The highest official is called the High Intendant of the Province and will be responsible for the good order of the Province. He will have fairly wide powers because the extent of China is so great that it is almost impossible to have complete centralization. The Central Government would find it tremendously inconvenient to direct all provincial policies, and for that reason it has been decided to empower other officials to act along certain lines for the development of the ideas of the President. The High Intendant will have the power of a high Provincial Official combined with that of a high Metropolitan Official, it being felt necessary to give the foremost official prestige to enable him to restore order and command the respect of the people. Under the High Intendant of each province will be the Intendants of the Circuits, similar to the Taotais of the old régime. The circuit Intendants will render assistance to the highest authority by governing the different circuits of which the Provinces will be composed. Each Intendant will have under him a number of Magistracies or Districts, which will be controlled by Magistrates. This simplifies the old system which divided a province into departments, circuits, prefectures, and magistracies, a system full of complications and which did not work well. The simplification of the old system now introduced will suit the conditions of the people better and meet the requirements of the times, though if experience shows that it is warranted the Government will make further modifications.

Mr. Tang Hua-lung, Minister of Education.

"Insofar as the military are concerned the troops will be divided into two classes; one will be the military force proper to be used for national purposes, and be under the command of a high military official, and the other will be the gendamerie which will be used to keep order in the Provinces and be available for the use of the High Intendant. These two forces will be under the contral of the Ministry of War in Peking, who will also be responsible for their pay. Each city will, of course, have its own police, the upkeep of which will be seen to by the provinces."

A BIG TELEPHONE SCHEME

The Japanese Department of Communications proposes to effect a plan of extension of telephone system to be carried out in five years at an expenditure of 4,000,000 *yen* a year, to instal at least 70,000 telephones.

Whether the proposal will be introduced at the next session of the Diet is not known, and the authorities are quite sceptical as to its prospects, as the Budget for the next fiscal year is to be compiled on the basis of minimizing all possible expenditure. The demand for the installation of telephones is increasing every year, and the Department has standing applications of no less than 120,000 at present. In order to fulfil those applications, a plan for installing the apparatus on a large scale is considered necessary. As to the third extension of the system this year, the Department has only 3,000,000 *yen* on account of the failure of the Budget, and only "urgent cases" will be dealt with.

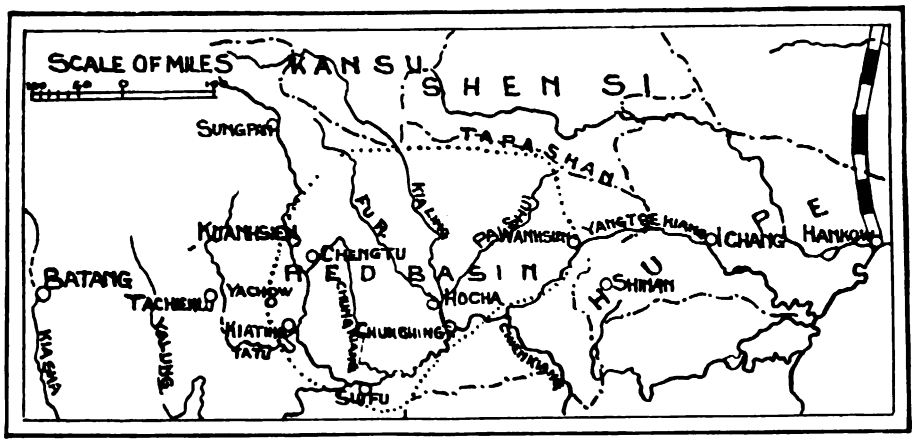
THE DEVELOPMENT OF SZECHUAN

THE PRITCHARD-MORGAN CONCESSION

A telegram from London which appeared in China papers early in June announcing that arrangements were being concluded by the Eastern Pioneer Company and two British houses to develop the resources of Szechuan province with British capital indicated to the general public that steps were at last being taken in some way to give effect to an agreement obtained from the Chinese Government in 1899 by Mr. Pritchard-Morgan. That agreement has been the subject of much controversy. The concessionaire has fought incessantly to have effect given to it, but claiming that the agreement had lapsed the old régime in China has refused consistently to comply with his demands.

With the disposition being shown by the present Chinese Government to have the resources of the country exploited an era of Development Company promotion has opened, and as a result all foreigners who have any claim at all to rights which will enable them to participate are able to secure the necessary assistance from their Legations in Peking to assist them to realise in some way or other the benefits which they believe will accrue if opportunity is obtained to commence operations.

The successful negotiations carried on by the Standard Oil Company to work certain oil deposits spurred many other concerns into activity, and in fact brought to life a real interest in particular in the Pritchard-Morgan concession. That the concession will be confirmed by the Chinese Government on the original lines is not, however, likely. The Government is willing to sign a new agreement, and negotiations have been carried on, but the operations of the Company will be restricted. There will be no exclusive right to the resources of Szechuan, though ample opportunity will be given to the concessionaires to employ their capital in what ought to be profitable avenues. In view of the negotiations and the possible eventualities a review of the history of the Pritchard-Morgan concession may be interesting, at least as a record.



The Red Basin of Szechuan.

In 1896 the late Li Hung Chang made an extended tour throughout Europe, and announced that China was about to be opened up to trade and commerce. Mr. Pritchard-Morgan called at the British Foreign Office and had an interview with Lord (then Sir Thomas) Saunderson on the subject, with the result that he obtained a letter of introduction from him to the late Sir Holliday Macartney, Councillor to the Chinese Legation, pointing out Mr. Pritchard-Morgan's qualifications to assist in the development of China.

Armed with this letter Mr. Pritchard-Morgan left England with Li Hung Chang in August, 1896, and on the passage to New York prepared a Memorial to the Throne of China for the creation of a Mining Administration, which Memorial Li Hung Chang approved, and on his return to China acted upon. Li Hung Chang desired personal letters from Lord (then Mr.) Curzon and Mr. Joseph Chamberlain (both then Ministers of the Crown) setting forth Mr. Pritchard-Morgan's qualifications to assist in China's development, for production to the Chinese Government. These letters were written and forwarded to and used by Li Hung Chang.

On his arrival in China Li Hung Chang, on October 29 of that year, cabled Mr. Pritchard-Morgan to come to China with his geologists and experts. Mr. Pritchard-Morgan immediately engaged a staff of three British subjects and one American and left England with them, arriving in Shanghai on December 28.

Li Hung Chang telegraphed Mr. Pritchard-Morgan, while on his way to China, to consult and assist His Excellency Taotai Sheng on Railway Regulations as well as Mining matters on arrival at Shanghai. Mr. Pritchard-Morgan and staff were continuously engaged in consultation with Sheng until March 6, 1897, when they all left Shanghai for Peking, arriving there March 15. On arrival at Peking Mr. Pritchard-Morgan informed the British Minister of the object of his visit, and consulted him on the subject.

On April 19 the American Engineer, Mr. Shockley, was instructed by Li Hung Chang to visit and report on Mines at Jehol, and Mr. Mayer, of the British Legation, accompanied him to Jehol for such purpose.

On April 30 Li Hung Chang gave Mr. Pritchard-Morgan a Power of Attorney authorising him to proceed to England to negotiate with the British Government to guarantee the interest on a loan for £16,000,000 to pay the Japanese indemnity. Mr. Pritchard-Morgan reached England on June 22, 1897, and continued these negotiations until January, 7, 1898, when the Foreign Office informed Mr. Pritchard-Morgan that the Chancellor of the Exchequer did not see his way to comply.

In March, 1898, Li Hung Chang again cabled Mr. Pritchard-Morgan to return to China, which he immediately did. On arrival in China he engaged three additional Engineers, Mr. J. V. Burn Murdoch, Mr. John Hay, and Mr. J. Holton Bush. In July Messrs. Hay and Bush were sent by Li Hung Chang to visit and report upon the Pingtu, Chaouyuan, and other Mines in the Province of Shantung. Work was continued until November, 1898, when the British Legation pressed the Chinese to do something practical.

On November 16 Mr. Fulford, of the British Legation, was informed "that Mr. Pritchard-Morgan would certainly be given some Contract as it was felt by the Chinese Government that he had spent a great deal of time and money since he had come to China at His Excellency Li Hung Chang's request."*

This promise was duly observed, and on November 25 a Preliminary Contract was signed by all parties at Peking: the final contract, or "Regulations" as they are called, to follow in due course.

Within four days of the signing of this Preliminary Contract (the same having been filed in the British Legation) Mr. Pritchard-Morgan, accompanied by Mr. J. V. Burn Murdoch and Mr. J. Holton Bush, left Peking for Shanghai, leaving Mr. Hay in charge at Peking. On December 7, Mr. Burn Murdoch (in charge of the first expedition), accompanied by Mr. Bush, Mr. Ferguson, an American, Mr. Everal, and a large Chinese staff left Shanghai for Szechuan.

* Blue Book, China No. 1, 1900, page 44.

The final Contract, or Regulations, were signed on January 30, 1899, and nothing now remained to make them perfect except the ratification of the Throne.

Soon after the departure of the Burn Murdoch Expedition to Szechuan, Mr. Pritchard-Morgan (having in the meantime taken offices for the Administration in Shanghai, the port of embarkation for Szechuan, for seven years) left for England to engage a further staff of geologists and engineers.

On February 28 (within less than one calendar month of the date of the Contract), the Burn Murdoch Expedition reached Chungking, the metropolis of Szechuan, and immediately commenced their work by enquiries as to the mining localities, and put themselves in communication with the British Consul in Szechuan relative to the object of the expedition. On March 31, 1899, the British Consul wrote a letter to the Viceroy informing him of the arrival of the expedition, and on April 18, 1899, the British Consul received a communication from the Viceroy relative to the matter. The Expedition remained in Szechuan, taking an office and awaiting further developments and instructions* from the Viceroy and other officials, and these in their turn were apparently awaiting the ratification by the Throne and advices from Peking.

Details of the work performed by Messrs. Burn Murdoch and Bush were fully set out in the sworn evidence filed in Peking.

Immediately after the Contract became known, M. Pichon, the French Minister in Peking, entered a protect against it being ratified by the Throne on the ground that it was opposed to treaty rights, and that it was in violation of an Agreement which had been entered into between Lord Salisbury and Baron de Courcelles that in the event of England or France getting any privileges or advantages in the Provinces of Szechuan and Yunnan, such privilege and advantages were to be participated in by each Government in equal proportions.

Lord Salisbury, then Foreign Secretary, held that the Contract created purely a Chinese mining administration with a British subject as one of the administrators, and that consequently it was not opposed either to treaty rights of the Agreement referred to.

Mr. Pritchard-Morgan arrived in England in February or March, and immediately opened negotiations with Dr. Jack, LL.D., F.G.S., the Government Geologist of Queensland, to leave the service of that Government, and to proceed with a staff to Szechuan in charge of an expedition to make a geological survey of the province.

On May 8, Mr. Pritchard-Morgan handed the Foreign Office a cheque for £800 to cover the cost of cabling the Contract to England, so that no time might be lost in getting on with the work. All this work was done and all this expense incurred prior to the ratification of the Contract by the Throne, but on July 31, 1899, the British Legation at Peking telegraphed the Foreign Office that the "Morgan Contract has been ratified by the Throne, and is now complete and binding upon the parties."

Immediately thereupon a Contract was entered into with Dr. Jack, who in the meantime had secured the services of two assistants, and they were engaged for a period of three years, Dr. Jack at a salary of £3,000 per annum, and the two assistants at £800 and £700 per annum and all expenses. Mr. Pritchard-Morgan again left for China with this staff in September, 1899, and, believing that the business was now thoroughly launched, left instructions for the formation of a Company to provide capital to carry it to a successful issue.

The Eastern Pioneer Company was formed on October 12 with a registered capital of £300,000, and an opportunity was offered to Belgian capitalists to join in the scheme, the Contract contemplating other nationalities as well as British. The late King of the Belgians was the largest individual subscriber of capital, and was, after Mr. Pritchard-Morgan, the largest Shareholder of the Company.

Mr. Pritchard-Morgan, Dr. Jack, and the second expedition reached Shanghai in October, 1899, and Dr. Jack and his expedition reached Chungking in February, 1900. On March 5 he left for Chengtu, the capital, to consult the Viceroy and Officials, and to carry out his instructions.

On March 23, 1900, at the suggestion of the authorities Dr. Jack entered into a contract to co-operate with the Pao Fuh Mining Company, who had already acquired mining lands, and Mr. Pritchard-Morgan was appointed Foreign President of the amalgamated companies.

On the March 31 a proclamation was issued by the Viceroy, Tartar General, and Mining Commissioner notifying that Dr. Jack and party were there in pursuance of the Contract and under authority from the Throne, and (accompanied by officials and escort) for the purpose of opening mines, etc. etc.

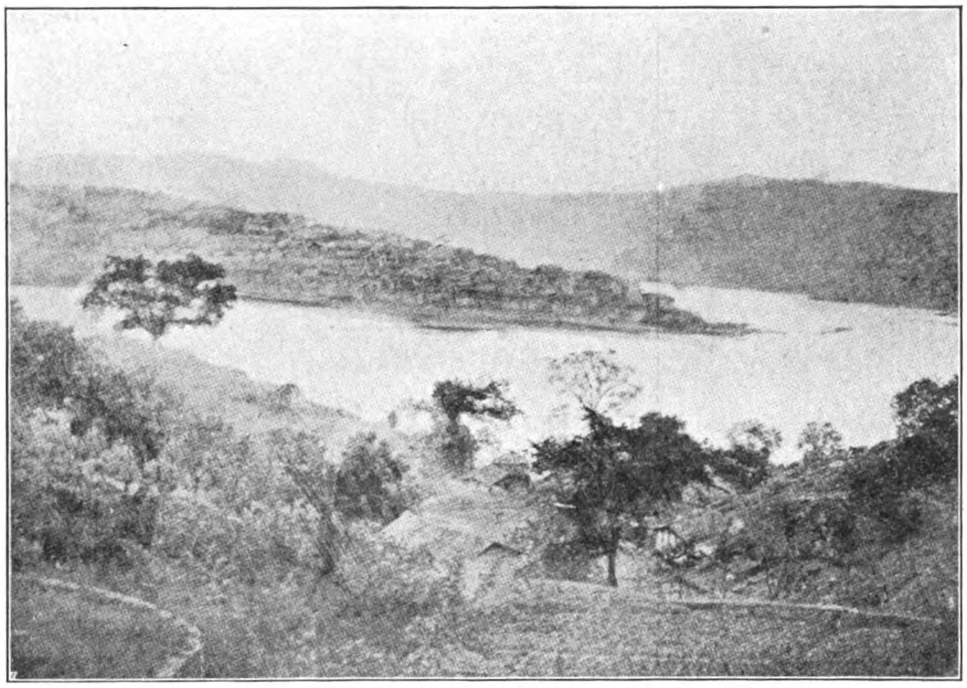
On April 4, Dr. Jack and party left Chengtu and visited Pen Hsien Copper Mines, returning to Chengtu on April 16, when he reported to the authorities the result of his examinations. He then proceeded to Anhsien, Shihchuen, Lungan, Sungpan, and Tee Chee Ting, where, on May 24, Dr. Jack received a telegram from the Mining Commissioner to return to Chengtu for a conference with the Viceroy. He reached Chengtu on June 2, where a very serious conference took place. It was then arranged, on the suggestion of the Viceroy, that the Yangtsze Valley Company, whose representative, Mr. H. L. Way, was at that time in Chengtu, should join forces with The Eastern Pioneer Company, and that Mr. Way should accompany Dr. Jack and party in their examination of the Ningyuan and Yachow prefectures, and that if possible they should join forces with the Merchant Shareholders of the Szechuen Government Merchants Co-operative Mining Bureau. They thereupon left Chengtu on June 16 for Jachow, en route for the Maha Mines, where they arrived on July 13. They made an exhaustive examination of the Maha Mine, and Dr. Jack sent a preliminary report on the Mine to the Eastern Pioneer Company's Office at Chungking on July 19. They continued their examination and on the following day (July 20) a preliminary Contract for the consolidation of The Eastern Pioneer Company

View of the Min River above Kwanhien. The river is divided into two channels by strings of boulders enclosed in crates of plaited bamboo.

* It will be observed on referring to the Regulations (particularly Clause 4), that we "must wait till the land is properly purchased (by the Chinese authorities) before starting work," and to have attempted actual mining operations would have been a gross breach of the Contract.

The Yangtsze Valley Company, and the Szechuan Government Merchants Co-operative Bureau for working together, as suggested by the Szechuan Authorities, was agreed to, but it was subject to ratification by the Throne. Thereupon the Eastern Pioneer Company and the Yangtsze Valley Company entered into an Agreement for participation with each other for a period of ten years. Dr. Jack and party and Mr. Way and their retinue remained examining the Maha Mine, and were raising and treating stone and actually producing gold when, on August 10 they were compelled by the Boxer rising to leave the country. The office at Chungking had to be closed on this date, and Mr. Bush left Chungking for Shanghai.

The following quotations show that the Jack expedition were working harmoniously with the Viceroy and other Provincial Officials, in pursuance of the Contract up to the 10th August, 1900, when the Boxer rebellion was raging and a price put upon every white man's head. The circumstances of their flight are described by Dr. Jack, LL.D., F.G.S., in his book "The Back Blocks of China:" "Three members of the party (Dr. Jack, Mr. Jack, junr., and Mr. Morris), representing Mr. Pritchard-Morgan, M.P. (who subsequently transferred his interests to the Eastern Pioneer Company), had been at work, chiefly in the Prouince of Szechuan, since the beginning of the year 1900, examining mining properties. They were joined towards the end of June by a fourth, representing the Upper Yangtsze Syndicate. After camping for some time at Maha, in the Valley of Ya Lung, west of the City of Ning Yuan, they left together for Burma on August 10th, in deference to the urgent request of the British Consul at Chungking, and arrived at Bhamo on October 21st."



City of Chungking, built in Rocky Peninsula at junction of the Kai-ling River and the Yangtsze.

"Finally, after long negotiations, we made a contract with the Yunnan Sung Pa Cheong (Yunnan Mail and Wood Oil-Carrying Company) for the transport of the party and our luggage and stores. The goods were to be taken to Chengtu by 36 coolies and a headman, or 'fu-tow,' in 11 days, for 1,100 cash per man for the journey. The three Europeans and the interpreter had riding ponies as well as chairs, and the cook and our three boys had also chairs of an inferior order. We left Chungking on our way to Chengtu on March 5th,"

"Chengtu, the capital of Szechuan, where we spent in all 45 days in March, April and June, is one of the most important cities in China,"

"A remark on the agricultural wealth of the district, and its apparent prosperity, led our host (the Viceroy) to reply that many of his people were wretchedly poor, and that he hoped the introduction of foreign methods, especially in mining, would raise the general standard of prosperity. I said that we had come to Szechuan with the intention of introducing English capital to develop its mineral wealth, if such wealth as had been reported really existed; and that we must, of course, first satisfy ourselves on that point; and that we relied on His Excellency's goodwill to let us do our work under the best conditions. He was good enough to say that he was very favourable to English enterprise that, in fact, the English and the Chinese were 'as one family,' and that arrangemente were in hand for putting every necessary official and military assistance at our service wherever we might travel through the Province. That these promises were not mere empty compliments was abundantly proved during the five months of our stay in China."

"During our three sojourns in Chengtu we were in constant communication with His Excellency Li Cheng Lung (Imperial Commissioner for Mines), and the members of the Szechuen Mining Bureau."

"The arrangements made by the Viceroy, in conjunction with the Tartar General, for our protection while travelling through the Province seemed at first over elaborate, and to have a tendency to make us ridiculous; but they proved to have been based on a knowledge of Chinese conditions, and stood the test in the troublous times which followed."

"Our first excursion from Chengtu was to the Copper Mines of Tung-Ling-Tse (Eastern Grove Monastery) and back, a journey covering 124 miles."

"At Shaa Ba (July 11th) I received a telegram, dated July 2nd, from Chungking, informing me that the German Minister had been murdered in Peking, and that the situation was very serious. There were also letters from a friend in Chengtu, dated July 3rd, which informed me that the Viceroy had been very anxious about our safety, and had consulted Li Cheng Yung, the Commissioner for Mines, who gave it as his opinion that the Maha district was for the present safe, and that our best course would be to finish our work as quickly as possible, and then return to Chengtu. We decided to go on with the business."

"We were received by the Wai-Yuan and other officials in charge of the branch of the Mining Bureau, in their office, which is a converted temple .... We camped for the night at the native reduction works on Ko-Lo Creek, a tributary of the Ya-Lung, where 80 head of stamps, driven by 40 overshot water-heels, were at work crushing stone from the Maha Gold Mine."

"An ascent of 400 feet and descent of 1,000 feet brought us (July 13th) to the modern mill attached to the Maha Mine; and here we made our headquarters till August 10th, examining the Mine and exploring the neighbourhood. The erection of a Huntingdon Mill or, rather, the transport of its heavy parts to such a position as this, is an enterprise which must have severely taxed the patience and ingenuity of the manager, Mr. Tong Sing Kow."

"On July 29th a bombshell fell into our camp in the form of a telegram from our correspondent at Chungking, dated June 30th, which, when translated from the cipher, read as follows:—"Revolution increasing. All women and children withdrawn from river ports. British Consul most strongly advises you to go to Burma. Europeans and Consuls ready to leave Chungking at a moment's notice. It is probable that all foreigners at Peking have been killed."

"The mail brought amongst other things a telegram, dated July 27th, from our correspondent in Chungking. It read:—"Foreign Office, London, telegraphed yesterday instructions take steps remove all British subjects from China."

"Within ten minutes of the receipt of this despatch we had said adieu to our good friends in Maha and started for Burma (August 10th) in a heavy downpour of rain."

On November 7, Dr. Jack prepared his full report on the Maha Mines to the Eastern Pioneer Company, and Mr. Way at the same time prepared his report to the Yangtsze Valley Company, which reports reached England in December.

As soon as order was restored, Mr. G. Jamieson, C. M. G., in Peking, and Mr. Archibald Little, in Szechuan, resumed their position as Agents of the Companies, and the Chinese then suggested modifications of contracts and new contracts, and continued to do so until November 23, 1901, when regulations for the establishment of an Anglo-Chinese Szechuan Company for the joint mining of petroleum, coal and antimony was signed in Szechuan. Further negotiations in Peking and in Szechuan continued until January 9, 1902, when Mr. Jamieson, in Peking, handed to Sir Ernest Satow, the British Minister, a memorandum respecting the Maha Mines, and also the prefectures of Ningyuan and Yachow which the Szechuan authorities had suggested to Mr. Little should be given in lieu of the "Morgan Contract."

Sir Ernest Satow took certain action in the matter but nothing resulted. The negotiations still continued with the two Agents in Szechuan and Peking, and ultimately another Agreement was entered into on February 11, 1903. This was a Preliminary Agreement known as the Ningyuan Agreement. This Agreement proposed to make void the "Morgan Agreement" and extinguish the Hwa Yi Company, and give the rights in the Prefectures referred to in lieu of the "Morgan Contract." This Agreement was to take effect on its ratification.

A Bridge at Chungking.

On the May 6, 1903, Mr. Jamieson cabled from Peking that the Agreement of February 11, which the Chinese proposed should be substituted for the "Morgan Contract," required the consent of the Eastern Pioneer Company and W. Pritchard-Morgan. Both the Company and Mr. Pritchard-Morgan declined to accept the New Agreement in lieu of the Original Contract.

The Russo-Japanese War was carried on in Chinese Territory during this period (1904-5) and it could not be expected that British or other capital would be invested.

Mr. Little continued his negotiations in Szechuan up to about June, 1905, endeavouring to come to terms satisfactory to all parties, but without avail. Mr. Jamieson, C.M.G., continued his negotiations in Peking until about January, 1906, representing the Companies and striving to obtain the same object but without success.

At the end of 1905, when the War between Russia and Japan had terminated and China appeared to be settled down, the Eastern Pioneer Company resolved to endeavour to resume operations, and on January, 2, 1906, notified their desire to the Foreign Office and requested them to be good enough to inform the Chinese Government to that effect, and to obtain from them guarantees that protection should be secured for the lives of their employees and the properties of the Company.

The English Government acceded to this request and in January, 1906, opened negotiations with the Chinese Government on the subject. Considerable correspondence ensued between the two Governments from January, 1906, up to December, 1907, when the Chinese Government postitively refused to allow work to be resumed on the ground, as they alleged, that work had not been commenced within six months of the date of the Contract.

On December 24, 1907, the Chairman of the Company (Col. Weatherall, C.B.,) the Managing Director, Mr. Pritchard-Morgan, and Mr. J. V. Burn Murdoch left for Peking, and, Mr. J. Holton Bush having joined the party, they all arrived in Peking on February 11, 1908, and evidence of a strict compliance with the Contract was sworn to and filed in the British Legation and forwarded by the Legation to the Chinese Government. Considerable correspondence again passed between the Legation and the Government, and when the Chinese were pressed as to the cancellation of the Contract they stated it was cancelled six months after its date. The reply to that was that it was ratified by the Throne 14 days after its alleged cancellation, that no notice was ever given to the Company or to Mr. Pritchard-Morgan the Foreign Assistant Director appointed by the Szechuan Mining Bureau, or the British Legation, that it had been cancelled, that many months after its alleged cancellation the Viceroy of Szechuan and other Officials had issued a Proclamation that the Company were there at work under the Contract, that the Contract having been ratified by Edict from the Throne, nothing short of another Edict from the Throne could cancel it, and that in August, 1900, Dr. Jack and his party were carrying out the instructions of the Viceroy and officials, in pursuance of the Contract.

All arguments failed, but the Legation still pressed the Chinese to consider the matter up to September, 1909, when Sir Edward Grey proposed Arbitration. To this the Chinese definitely refused to agree, whereupon Sir Edward Grey requested the Company to make out a claim for compensation, which claim he promised would receive the support of His Majesty's Government. The British Minister filed this claim, and the Chinese have now declined to pay the amount, stating that the Contract ought to be cancelled because work was not commenced within six months of the date of the Contract. The letters of the Viceroy and other evidence prove conclusively that the Company had been continuously at work from February 28, 1899 (when the first expedition arrived in Szechuan)—the final Contract being signed January 30, 1899—up to August 10, 1900, when they were compelled to leave.

During the progress of these negotiations the Eastern Pioneer Company often suggested the formation of an International Combination to work under the contract, pointing out that inasmuch as an International Combination was being formed for the building of the railways towards Szechuan, an International Combination for the working of the mines and industries of that province would be desirable.

The International Railway Combination being now complete, the Eastern Pioneer Company was desirous of enlisting the sympathy and support of His Majesty's Government in the formation of an International Combination for working the mines and industries of the province. The representatives of the Company who were still in Peking awaiting some solution of this question were strongly advising such a combination, and the Directors of the Company holding the rights were extremely desirous that such a combination should be formed in preference to receiving the compensation demanded.

The proposed international combination did not develop, however, the Chinese persisting in their attitude of not recognising the old contract. For some time the question was left in abeyance but ultimately a series of questions, asked in the House of Commons, and inspired by the conclusions of negotiations with the Standard Oil Company stirred into activity the Foreign Office, who instructed the British Minister in Peking to again take the matter up with the Chinese Government.

As a result of interviews the Chinese Government agreed to negotiate a new agreement, and, as stated above, these negotiations are still proceeding, but the result will probably be a limitation of the scope of the Company.

The following is the original agreement granted to Mr. Pritchard-Morgan on April 14, 1899:

THE 1899 AGREEMENT

1. The Szechuan Mining Bureau establishes the Hua Yi Company, by whom an Agreement is drawn up with the Hui Tung Company that the work is to be done by Chinese and foreigners conjointly to their mutual benefit. Profits are to be divided proportionately, so as to avoid trouble and disputes.

Both Companies shall obey all the Regulations mentioned in the Agreement and the existing Rules memorialized and adopted by the head office.

2. The Hua Yi Company is to subscribe a sum of 1,000,000 taels for the purchase of land. This must be Chinese and not foreign money.

This Company is to buy and own all mining lands and carry out all negotiations. The Hui Tung Company have no interest in the prices of land, whether dear or cheap, nor with the amount of capital spent or reserved. When the Hua Yi Company has bought the land obtained the right to open mines, the same is to be handed over to the Hui Tung Company for working. In the Hui Tung Company there are foreign merchants; they are not to be allowed to buy mining property from any other Chinese, so as to avoid all complications.

3. The Hui Tung Company, with a Chinese Managing Director and a foreign Assistant Director, is to prepare a working capital of Tls. 10,000,000, to be formed first of 50 per cent. Chinese Shares and next 50 per cent. of foreign shares.

Shareholders of all nationalities are allowed to take shares out of the 50 per cent. allotted to foreigners. There can be no monopoly for any one country. Now, Mr. Morgan, an English merchant, has taken shares, and undertakes to assist in carrying out the work. Shareholders of all other nationalities who should hereafter take shares will be supplied with share certificates, paid dividends, and refunded capital according to the number of shares they take. Should any other country also start a Company on the same lines, with both Chinese and foreign Shareholders, the mines of the one Company will have to be kept distinct from those of the other. Different Prefectures and districts will be granted to each Company in work in, and their proceedings should be regularly reported to the head office, but the Rules and Regulations of this Agreement must, however, be complied with by all to prevent any unfairness. Any Company composed of foreign shareholders only and no Chinese shareholders shall not be allowed to work any mines.

4. The Hui Tung Company is to send out mining engineers to find out what mines are worth opening. This Company is then to consult with the Hua Yi Company to make maps and insert explanations, and submit the same to the Mining Bureau of Szechuan. If these mines are not already being worked by officials, gentry, or merchants, and if they are not injurious to the place, land is to be at once bought; such land is only to be enough for the shafts and the necessary buildings. If the lands belong to the people, the lease or purchase shall be made by the Hua Yi Company by arrangement with the owners for a reasonable price. It can also be taken as a subscription of capital, and a proportionate value of shares granted to the owner. If it be public property, such as a monastery, temple, etc., the owners have the option of leasing it, renting it, or subscribing it as capital. The Hui Tung Company must wait till land is properly purchased before starting work, and no compulsory purchase or seizure of the land will be allowed.

5. After each mining property is bought by the Hui Yi Company, it is to be handed over to the Hui Tung Company for working. From the mines worked by the Hui Tung Company, such as coal, iron, petroleum, etc. the Hui Yi Company is allowed to collect rent at the rate of 5 per cent. on the value of the output, no matter whether such mines make money or not. To reckon the producing capacity and the prices of products, whether dear or cheap, the rent is to be paid on the real price at which the Hui Tung Company sells the products. The value must not be under estimated, and any undue advantage gained. With regard to gold sand obtained from gold mines, a rent of 5 per cent. will be charged on the pure gold obtained after the gold sand has been thoroughly washed, but not on the sand before it has been washed.

6. Of the mines worked by the Hui Tung Company, such as coal, iron, petroleum, etc., there shall be paid to the Chinese Government, as producer's tax, 5 per cent. on the value of the output of the mines. Export duty shall be paid according to the existing Rules now in force. The Szechuan Mining Bureau shall authorise the Hua Yi Company to collect the producer's tax and to compare the same with the rent, and thus there will be no difference or shortage. No officer shall be deputed for this purpose, so as the save unnecessary expense. The export duty is to be collected by the custom house, and after the export duty is paid, no inland likin dues will be required. As regards the taxes to be charged on precious metals of all kinds, they are to be decided by the Board of Revenue.

7. The Hui Tung Company is to send engineers to find out all the mines that are to be opened and to consult with the Hua Yi Company, which submits the same for the approval of the Mining Bureau. Should a mine be found in a Government hill, the opening of which will not be injurious to the place, permission will be granted to open it. The ordinary land tax on such land would, however, be too small a sum for the Company to pay the Government for its use. In the case of Government land, therefore, the 5 per cent. rent and the 5 per cent. producer's tax are to be collected at the same time, and both paid to the Chinese Government; but 10 per cent. of the rent is to be reserved to pay the expenses of the Mining Bureau and the Hua Yi Company. The Hui Tung Company is to pay the export duty.

8. The area of Szechuan is very extensive, and all sorts of mines exist. Chinese who work on their own property are only required to obtain the necessary permission, pay the necessary taxes, according to the Rules in force, and they are in no way restrained. But if foreign merchants undertake to work the mines, their operations must be limited in some way or other. They must confine themselves to certain intendancies, prefectures, or districts, and not take the whole province as their sphere of work. Now work must be started in the interior first, and at the boundaries afterwards. The Hui Tung Company shall then send engineers to find out first where are mines to be opened and what mines they are; if the same be in districts apportioned to savages, the Hui Tung Company must wait till they find out whether the advantage will be greater than the injury, and devise other means to open them. The Hui Tung Company in such event cannot compel the Hua Yi Company to buy the land quickly and hand it over for working. Any possible cause of disturbance must be avoided.

9. When prospecting for mines, if any boring or sinking of shafts be necessary to examine mineral deposits, an arrangement should first be made by the Hua Yi Company with the land owner for the Hui Tung Company to compensate him according to market prices for any crop, etc., injured. After the mines are opened, should there be any damage to life or buildings caused by land-slips or subsidence in the mines, the Hui Tung Company shall make charitable compensation. If after mines are opened cemeteries or mortuary shrines are met with, some plan must be devised to avoid them if the owners do not like to remove them for money given; no excavation will be allowed. In excavating, as long as the galleries dug below the ground are not injurious to the soil above, rascals are not to be allowed to obstruct the work on the grounds that it is injurious to "Feng Shui." Local authorities must be applied to for protection. The Hui Tung Company is not, however, allowed to claim compensation on these grounds in case it cannot succeed.

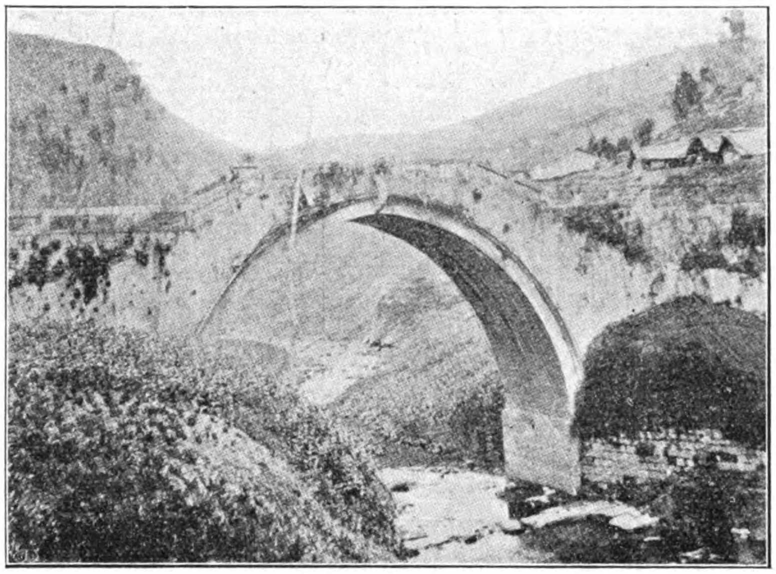
10. Whenever it may be necessary to make roads, build bridges, open or deepen rivers, erect sheds, make tools, or other necessaries for mining purposes, and land is required for such purposes, the Hua Yi Company is to buy the land and the Hui Tung Company to pay for it. If water power is required for machinery, and enormous work is done on it, no other person is allowed to make use of it. If branch railways have to be constructed in order to connect the mines with the usual trade routes, a thorough survey must be made of the proposed lines and maps drawn with explanations attached. These must be submitted to the Mining Bureau, which will forward them to the Szechuan Viceroy and head office at

A View of the Min River as it emerges from the Azure Wall range, showing on the right, the temple dedicated to Liping initiator of the Kwanhien Hydraulic Works, about B.C. 250.

Peking for record and sanction. Nothing of the kind should be undertaken without such sanction. If telegraphs and telephones are wanted for connecting the various mines, the same are to be submitted to the Mining Bureau for approval.

11. The Hua Yi Company is to deal with all matters of negotiation, and the collection of rent and taxes; the Hui Tung Company to superintend and work all mines. Each has its own sphere of work, but each Company may inquire into the other's affairs. A Chinese Manager and a foreign Manager should be appointed for each mining work, whose salaries shall be paid by the Hui Tung Company. The majority of the overseers should be Chinese, and all the miners natives of the province. All are to receive adequate wages, and further Rules must be made on this subject by the Hua Yi and Hui Tung Companies. Later on, the Mining Bureau should instruct the Company to select for important positions any Chinese who may have become proficient in mining engineering. They are to be treated the same as foreigners, to encourage improvement.

12. On opening the mines, the Hui Tung Company shall establish a School of Mining and Railway Engineering in some locality convenient to the mines, and there shall be selected twenty or thirty promising youths by the local officials and gentry to study in this school, under foreign instructors, and be thus prepared for future employment on railways and mines.



Bridge East of Ning Shih, Yangtsze River.
(From Logan Jack's "Backblocks of China.")

13. At places where mines are opened, the Mining Bureau should apply to the local authorities for protection. Such mines should also obey their rules, and enrol volunteers to guard against thieves, etc. If the natives shall enrol themselves as volunteers of their own accord to protect the localities, the Hui Tung Company should also subscribe towards their expenses.

14. The Mining Bureau, acting as intermediary between the superiors and subordinates, is to attend to all negotiations between natives and foreigners and matters of protection. The work involved, as well as the expenses, will be great. The Hui Tung Company should therefore start work within three months after the signing of this Agreement, and pay the Mining Bureau the sum of Tls. 100. per month for its working expenses for each mine, reckoning from the day when work is started. There will be no other charges besides this. If work be not started after six months this Agreement is considered cancelled, and the Hua Yi Company will be at liberty to invite other merchants to take up the work. It will be no concern of the Hui Tung Company.

15. The Hui Tung Company shall work all the mines according to the existing Rules adopted by the head office. After paying the producer's tax and the export duty, if there should be a profit by the annual accounts, there shall first be paid 6 per cent. interest on the capital employed, next 10 per cent. of the remainder of the profits shall be set aside as a sinking fund for the yearly repayment of capital and consequent reduction of interest, payments to sinking funds when the invested capital is wholly repaid, and from the remaining net profit 25 per cent. shall be paid to the Chinese Government, and the remainder shall go to the Hui Tung Company for its own disposition.

16. The Hui Tung Company is to open not one mine, but a large number. The accounts and profits of each mine must be kept distinct from the others; the gains of one mine should not be made to offset the losses of another, and so cause the Government income to suffer reduction.

17. At the end of every year, the Hui Tung Company shall make up distinct accounts of the different mines, whether profitable or not, and the same must be audited by the foreign and Chinese Managers, and when found correct, a printed account of profit and loss shall be rendered by each mine to the Mining Bureau for approval. A general account of profit and loss for all the mines shall then be prepared and submitted to the head office at Peking, the Board of Revenue, and the Viceroy of Szechuan for audit. Payments due to the Government shall be remitted at the same time. The report shall show the real amount of money due to the Government in order to avoid all discrepancies in the accounts. The Chinese Government and the Hua Yi Company are not to be held responsible in case of loss.

18. The Hui Tung Company is to have control of all the mines opened by them for a period of 50 years, reckoning from the date on which each mine is opened, on expiration of which term all the mines, whether profitable or not, shall with all plant, machinery, materials, buildings, roads, and all proporty acquired by the capital of the mines, be handed over gratis to the Chinese Government without asking for compensation, and in due time the Mining Bureau of Szechuan shall report to the head office at Peking, and the Viceroy of Szechuan shall send Deputies to take delivery of the same. The land rented by the Hua Yi Company shall be handed back to the original owners.

19. The Hui Tung Company being formed of Chinese and foreign shares shall, at its own choice, sell and buy its shares according to the fluctuation of the market rates. If the Hua Yi Company, or any Chinese gentry or merchants, shall, within the said term of fifty years, acquire three-fourths of all the shares in the Hui Tung Company, the mines may then be taken over from the Hui Tung Company, and the Mining Bureau shall report upon the same and direct the said shareholders (merchants) to take charge of the mines.

20. Should any mines opened on land bought by the Hua Li Company and handed over to the Hui Tung Company, be stopped on account of no profits being made, and the rent cease to be paid, then the Hua Yi Company has the option of adopting other means to open such mines, or use the land for any other business. This of course, is to prevent the money spent on the land from being wasted and, consequently, has nothing to do with the Hui Tung Company.

21. If the Hui Tung Company sends out engineers who discover certain mines in certain places, and report the same to be rich, but cannot guarantee the same, and it is exceedingly difficult to purchase the necessary land for working such mines, the Hui Tung Company should in such cases pay the purchase-money for the land to the Hua Yi Company, who shall have the said land purchased and handed over for working. This will prevent the purchase-money being wasted. If a mine is discovered in the land purchased, the price paid for the land will be repaid to the Hui Tung Company by deducting the rent of 5 per cent. until the whole purchase-money is paid off, when the Hua Yi Company shall again collect the rent of 5 per cent. as usual. Should there be no mine in the land purchased, no rent shall be payable to the Hua Yi Company, and the Hui Tung Company, being unable to recover the purchase-money, shall not deduct the same, with interest, from any other mine. This is agreed to by both parties and a further guarantee will be given at the time.

22. All machinery, materials, and supplies needed for the mines opened by the Hui Tung Company shall, on importation, be subject to the Rules in force for the Kaiping and other Mining Companies, and pay one full duty and one-half duty to the Maritime Customs, and shall be exempt from all inland likin dues.

23. These mines being under the sovereignty of China, should China ever be at war with another country, the said Company shall obey the orders of the Chinese Government, and grant no aid to the enemy.

24. The Hua Yi Company and the Hui Tung Company shall obey all Rules and Regulations adopted and memorialized by the head office, even if the same be not stipulated in this Agreement.

25. This Agreement with Regulations agreed upon, shall be made out both in Chinese and English, in eight copies, to be signed by Director Li Tai Ching, of the Hua Yi Company, and foreign Assistant Director Morgan and Chinese Assistant Director Liu Hsio Shun, of the Hui Tung Company, and to be sealed by the seal of the Mining Bureau of Szechuan. One copy each of this Agreement is to be sent to the Mining and Railway Board at Peking. The Tsung-li Yamen, the Board of Revenue, the Viceroy of Szechuan, and the Treasurer of Szechuan for reference. Of the remaining three copies, the Szechuan Mining Bureau, the Hua Yi Company, and the Hui Tung Company are to keep one each as proof. If there be any mistakes in the translation, the Chinese text shall hold good.

Signed this 14th day of April, 1899.

GENERAL ELECTRIC CO. OF NEW YORK

The following announcement is made by the Shanghai Municipal Electricity Department:—

For the supply of six 625 K. V. A. three-phase oil cooled transformers for use in the Central District Substations, to be of the same manufacture and design as those heretofore installed, tenders were invited in London from the General Electric Company of New York and the British Westinghouse Co., Ltd., and the tender of the former, for an improved type of apparatus has been accepted. Details of tenders are as follows:—

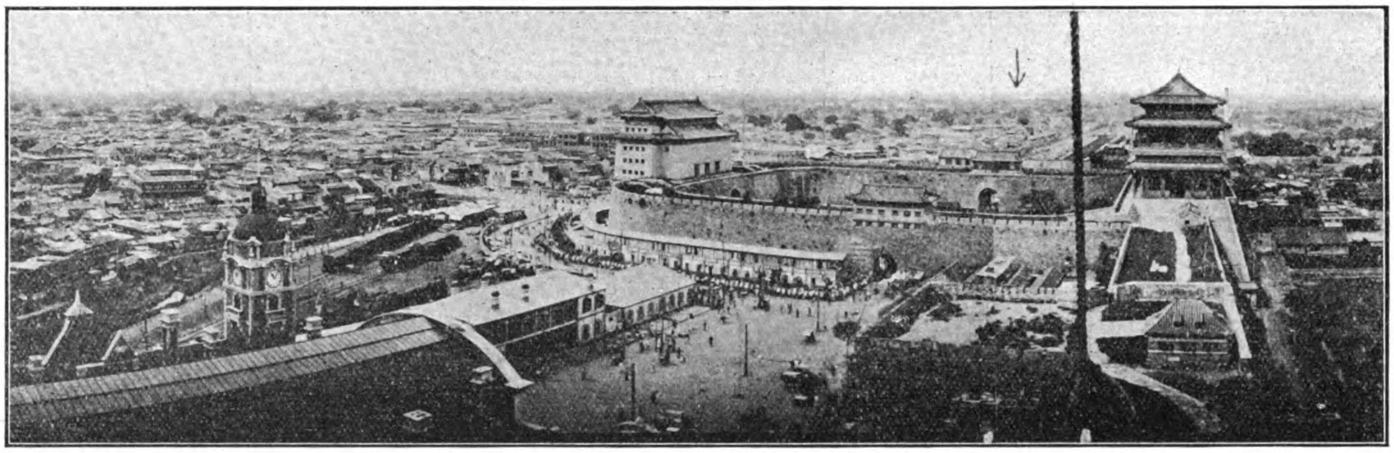
Manufacturer	*Price*	*Delivery*
General Electric Co.	£2,100	14 weeks
British Westinghouse Co., Ltd.	2,090	14 „
General Electric Co.	2,010	14 „

RAILWAY AROUND PEKING

CONNECTING UP IMPORTANT TERMINALS

The Ministry of Communications have at last come to an arrangement with the Peking City authorities whereby they will be able to connect the terminals of the Peking-Kalgan, the Peking-Mukden, the Peking-Tungchow, and the Peking-Hankow railways. Later a Central Railway station will be built at which it will be possible for passengers to take trains over any lines open for traffic from the Capital. Similar conditions exists with regard to the Peking-Kalgan railway, though the route is much more round-about than is the case with the other lines.

To overcome this difficulty, and to give passengers greater facilities, doing away entirely with the long and tedious ride across the city to reach the Kalgan railway, it is now arranged to have a line built round the north and east sides of the city which will connect the Kalgan railway direct

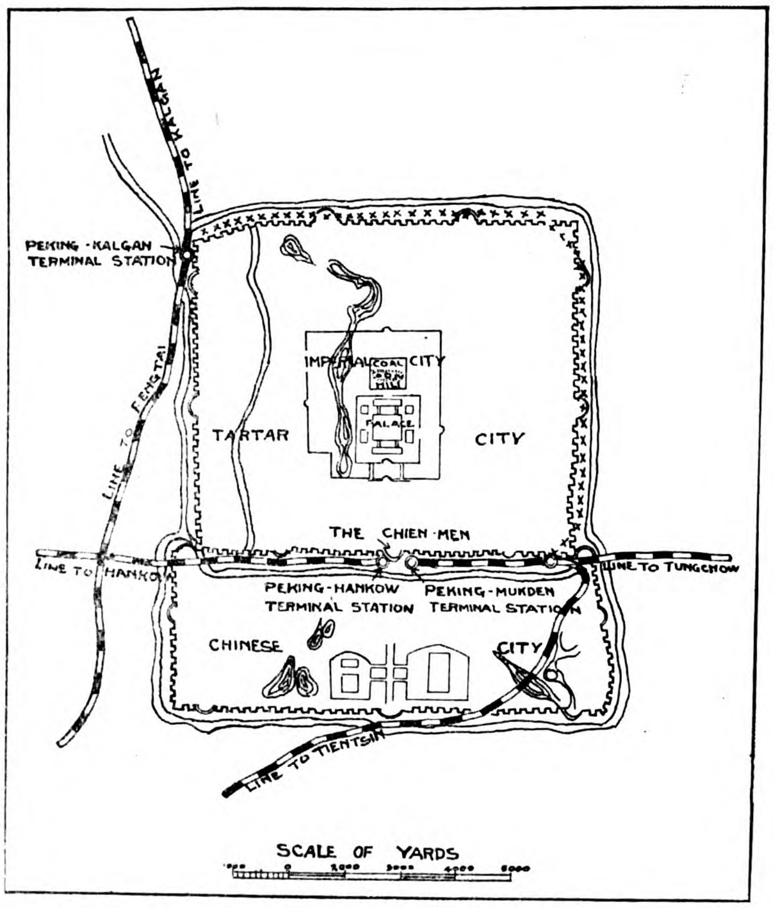


THE CHIENMEN GATE, PEKING.

This unique photograph, taken from the top of the wireless telegraph mast on the wall behind the American Legation, clearly shows the system of construction of the gateways in the Tartar Wall of Peking. The clock-tower in the foreground of the picture is part of the terminal station of the Peking-Mukden Railway, while the arrow points to the terminus of the Peking-Hankow Railway. It is now proposed to remove the intervening walls forming the curtain of the Chienmen Gate, leaving the two gate towers standing. The tower on the right of the picture, is of course, on the top of the main Tartar wall and is the main tower of the Chien-men.

The need for a connecting link between these railways has been felt for a considerable period, and with the effluxion of time and the development of traffic the disabilities connected with the transportation of cargo from one line to the other have become intensified.

Although the terminals of the Peking-Mukden and the Peking-Hankow railways are but a stone's throw from one another, being situated to the east and west of the curtain, or demi-lune, of the famous Chien-men Gate, cars can only be transferred from one line to the other by utilising a connecting link situated some miles from the Capital on either side.

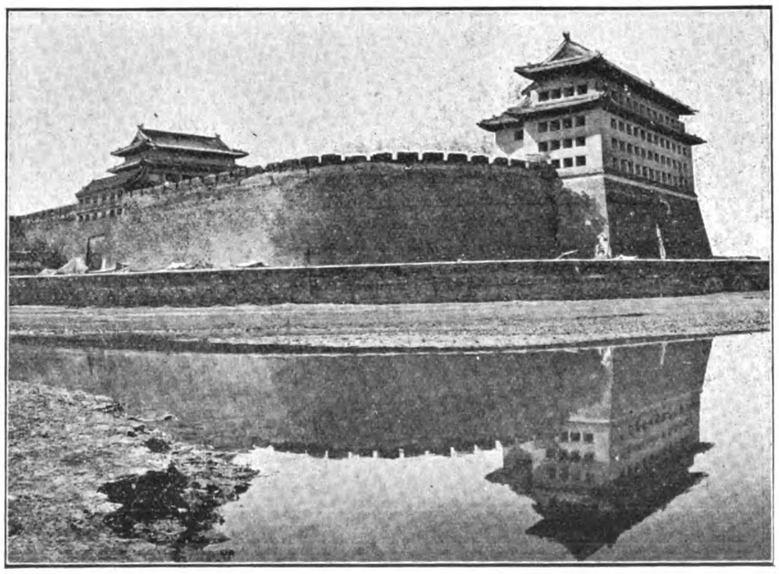


The line of crosses shows the route of the connecting railway.

with the Peking-Mukden and the Tungchow railways, permitting passengers embarking from the Legation Quarter to take the train for either place at what is known as the Water Gate Station, while three new stations will be built on the east and north of the Tartar Wall to accommodate people living in those sections of the city.

What is now the Hsichimen station of the Kalgan railway will be extended along portion of the north-west wall, and the railway will be taken straight along the outside of the wall to the north-east corner where the north and the east walls will be pierced to permit of a serviceable curve being constructed. The line will then run down the east wall and pierce the south-eastern corner to permit of another curve to join with the existing line terminating at the Water Gate Station.

The line will be about seven miles in length and will hug the wall the whole way, being built upon the high land between the moat and the wall. This will necessitate a change in all the gates on the north and east, a matter which gives the city authorities some concern, for they are loath



THE ANTING-MEN GATE, PEKING.

As in the case of the Chien-men the stone curtain shown in this picture will be removed, leaving the tower on the right of the picture, and the one on the left—which is on the main wall—standing.

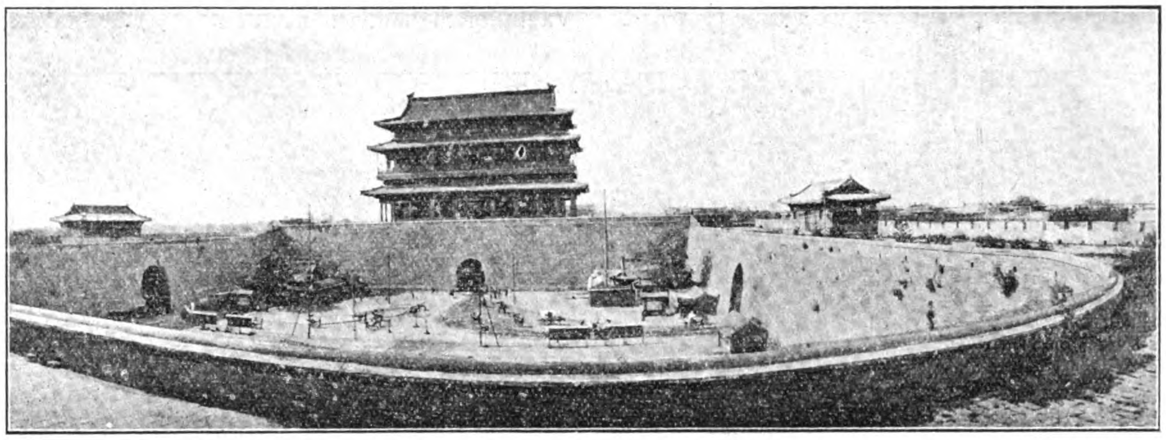
to allow the architectural grandeur of the wall to be interfered with. They recognise the arguments of the utilitarians, however; and since no better route than what the land beneath the walls provides can be secured

they are willing that the gates shall be altered in order to permit the railway men to have their way.

The engineers find it necessary practically to erase the great curtains which curve on the outside of the north gates, while on the eastern side they will be able to tunnel through the curtains of the two gates and to a greater or less extent preserve their ancient state. On the north the outer gates and towers will be preserved, the city authorities demanding that steps shall be provided so that they may be reached by pedestrians who may desire to climb them.

Between the Tehsheng-men (or Gate of Victory) and the Anting-men (or Peaceful Gate) a new station will be built, while a second one will be constructed between the Anting-men and the eastern corner of the wall. A third will be situated between the Tungchih-men (or Direct East Gate) through which the road to Jehol runs, and the Chaoyang-men (or Gate of the Rising Sun) through which runs the road to Tungchow. These stations will assist to develop the eastern and northern sections of the city, and will give easy access to the railway to travellers to Kalgan who might live in these localities.

At the south-eastern corner of the city, and connected with the Peking-Mukden railway, is a short line which gives access to the old granaries. Over this spur the tribute rice used to be carried from the main lines to the stores, but as tribute rice has ceased to come to the Capital that spur will no doubt be done away with now that improvements are being undertaken.



ANOTHER VIEW OF THE CHIEN-MEN, PEKING.

This view of the Chien-men is taken from the small gate tower, and shows the passenge way through the main Tartar Wall, and the main pavilion, as well as the curtain which is to be removed.

The most important alteration which will be effected in connection with the gateways of Peking, and the one which will be regarded with most regret by those whose artistic susceptibilities are always ravaged by the advance of utilitarian projects, will be at the famous Chien-men (or Meridian or Noonday Gate). Here it is intended to pull down the imposing curtain and so create a wide avenue between the Peking-Hankow and the Peking-Mukden railway stations. That the massive grandeur of the chief entrance to Peking will be affected is certain though the fact that the tower surmounting the south gate of the curtain will be preserved, with suitable flights of steps on either side so that it might be reached by visitors, will probably enhance rather than diminish the general aspect. At all events the removal of the wall will certainly be of tremendous advantage in the handling of traffic which is daily becoming a more and more difficult problem.

After the curtain is removed a fine esplanade will exist, and later the Peking-Hankow and Peking-Mukden railways will be connected, by a loop to the south of the outer gate. A central railway station will be erected, somewhere in the vicinity in the future. A site for this important centre has not yet been selected.

To facilitate the handling of traffic in and out of the city two tunnels will be bored through the wall on either side of the existing arch forming the Chien-men. One will be utilised for the proprosed tramways, while the other will be used for passenger traffic. These are absolutely necessary improvements, and will be appreciated by all whose lot it is to have to traverse this section of the city.

The cost of making the Chien-men alterations will be borne by the Peking-Mukden and the Peking-Hankow railways between them, it being deemed that they are the ones who will benefit by the change. The city authorities bear none of the cost of the projected improvements in any part of the city, but they demand that the artistic features of the gateways which will be affected shall not be destroyed or rendered unsightly. The cost of building the line round the north and east walls will be defrayed by the Peking-Kalgan railway, with assistance if necessary from the Peking-Mukden railway funds.

It is expected that work will be commenced on the alterations of the Chien-men almost at once, the contract having been signed, and as soon as the city authorities have approved the plans the railway will be commenced. It is expected that within two months of the beginning of work trains will be in operation.

NEW BANK BUILDINGS IN CHINA

The development of foreign banking interests in China is necessitating the erection of adequate foreign buildings adapted to banking purposes in the Capital for those institutions which have not yet accommodated themselves in this respect, and improved premises elsewhere.

At the present time both the Chartered Bank of India, China and Australia, and the Banque de l'Indo-Chine are carrying on active operations in the erection of suitable modern premises at Peking, and it is reported that the Banque Industrielle de Chine and certain Chinese banks are arranging for the erection of buildings on the ground at present occupied by the Ministry of Finance, near the Legation Quarter.

The Hongkong and Shanghai Banking Corporation, the Russo-Asiatic Bank, and the Yokohama Specie Bank have been in their own premises for some years, but others doing business in Peking have been forced to do the best they could with any houses available. Business is growing so fast that make-shift premises can no longer be tolerated, and we would not be surprised to see the International Bank, the Bank Sino-Belge, and others, soon following the steps being taken by the Chartered and French Banks.

The Banque de l'Indo-Chine is erecting its new premises on the site which it has always occupied, in Legation Street, opposite the Russian Legation, while the Chartered Bank of India, China, and Australia has purchased a site at the corner of Legation Street, opposite the entrance of the American Legation.

The Chartered Bank

The lot purchased by the Bank is a narrow one with a frontage on Legation Street of 37 feet and on the Rue Linevitch of 165 feet. The building has been designed to consist of a basement, ground, first, second and attic floors. The exterior will be faced with granite and red pressed brick work, and the first floor will be provided with balconies.

The Basement will comprise a spacious reinforced concrete treasury and sub-treasury, a large fire-proof record room, and several store and clerks rooms, besides the heating chamber.

The Ground Floor will be entirely for banking business, the main entrance to the Banking Hall being at the corner of Legation Street. To the left of the Banking Hall will be a commodious office for the Agent. In the centre of the building will be the Chief Assistant's office, so placed as to give an unbroken view of both the Banking Hall and shroff's office; the latter with the compradore's office taking up the rest of the space on this floor, but having a separate entrance from the north-east corner.

Another entrance on Rue Linevitch will give access to the main stairs of the Agent's residence and junior staff quarters on the first and second floors respectively. The stairs are to be constructed of reinforced concrete throughout.

The servants and kitchens are provided for in the attic floor; and the building will be equipped with complete heating and sanitary plants.

The architects are Messrs. A. J. M. Shaw and C. Thunder.

The Banque De L'Indo-Chine, Peking

The new building of the Banque de l'Indo-Chine, an elevation of which we are able to produce in this issue, is now under construction on the Bank's property in Legation Street, Peking, and when completed, will form one of the most important and up-to-date buildings in the Capital.

The type of architecture adopted for the exterior is of the Ionic order treated along Italian Renaissance lines, and with every detail of the work carried out with a due sense of proportion combined with solidity of construction, the result will give a very pleasing effect, as well as the feeling of protection so essential in a banking establishment.

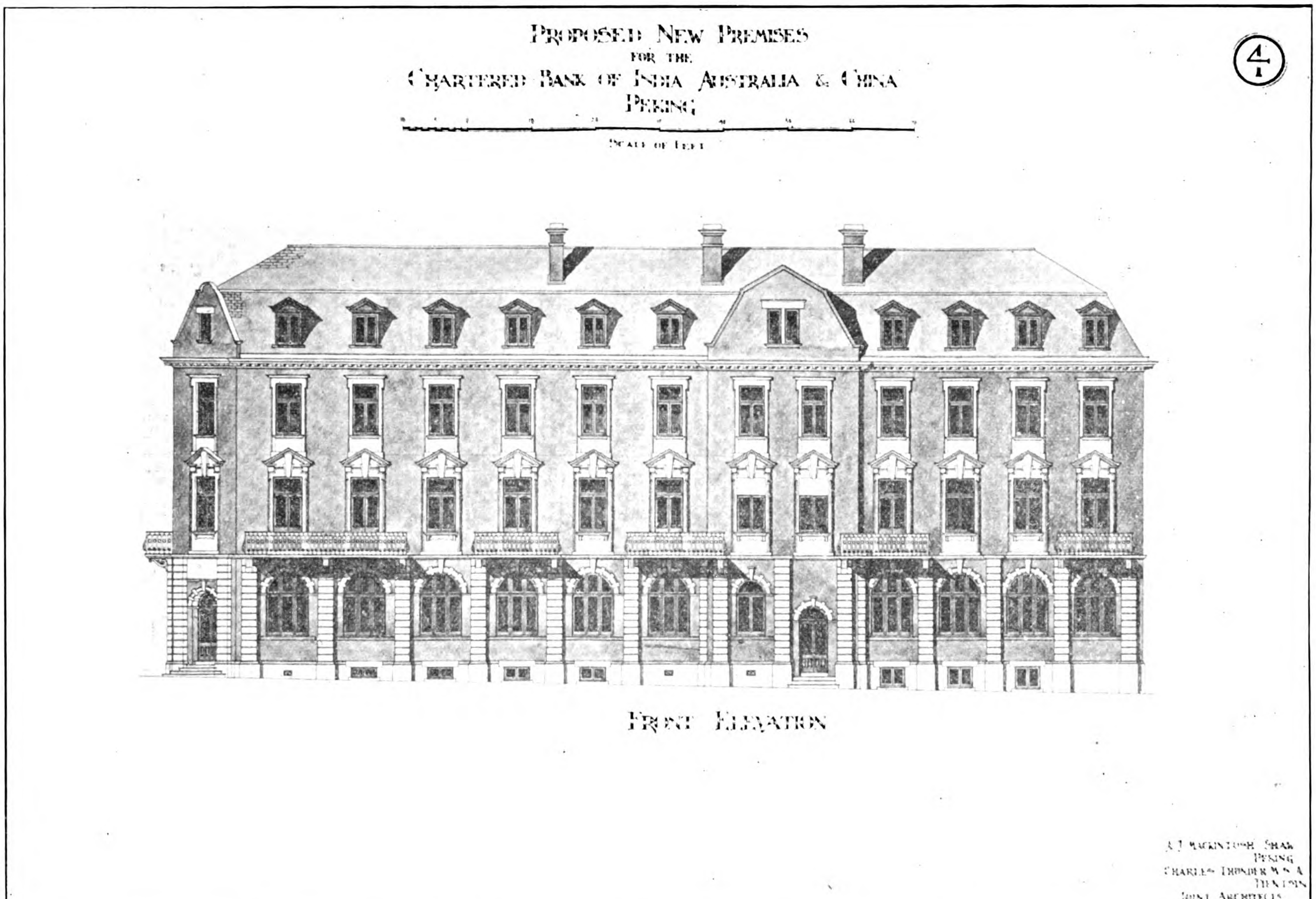
The frontage of the main building is set back about 20 feet from the boundary in Legation Street, along which there will be an ornamental wrought iron railing with wrought iron entrance gates in same giving access to the different parts of the building.

The North and West elevations, being those principally seen, are to be treated with a columnar arrangement of pillars and pilasters in Hsishan stone, with a stone entablature and balustrade over same, while stone is also being used in the lower part of the front and in the central part under the pillars. Stone dressings are also to be used round the windows and doors as well as at the corners throughout. The remainder of the facing is to be carried out with selected quality local red facing bricks. The roof will be a flat one and can therefore be utilised as a roof garden.

The accommodation will comprise, on the ground floor, a large Banking Hall giving ample accommodation for the staff and for the public, and on the right of the space for the latter, there is an office for the Manager with that of his Secretary adjacent. Next to the latter is the private staircase leading to the Manager's residence on the upper floors, while adjoining this there is a large Board room. On the left of the Banking Hall, accommodation is arranged for the Chinese customers of the Bank, as well as for the compradore, shroffs, etc. The first and second floors are arranged as residential quarters for the Manager.

Amongst other accommodation in the basement, there is a large and commodious strong room for treasure, while adjacent thereto, another interesting feature will be the Safe Deposit Vault for the convenience of the public renting lockers for the storage of documents and other valuables, and which will be fitted up with all the most modern fittings.

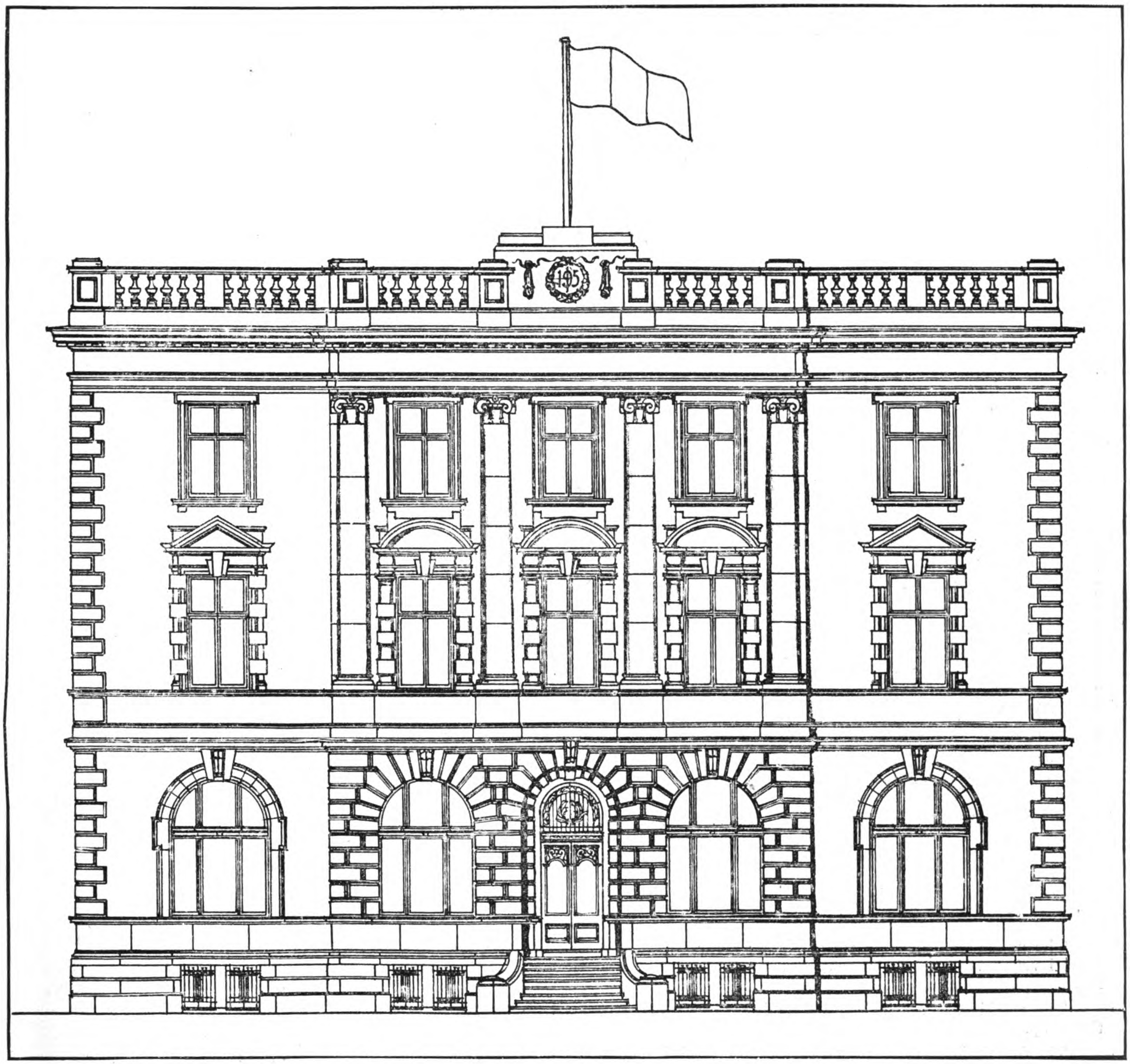
The whole of the work is being carried out from plans prepared by and under the superintendence of Messrs. Atkinson and Dallas Ltd., Civil Engineers and Architects, 4 Legation St., Peking.



The Banque De L'Indo-Chine, Shanghai

The new building of the Banque de l'Indo-Chine on the Bund in Shanghai, was formally opened on June 13.

The main entrance to the Bank is in the centre of the building, with Manager and Sub-Manager's offices on either side of

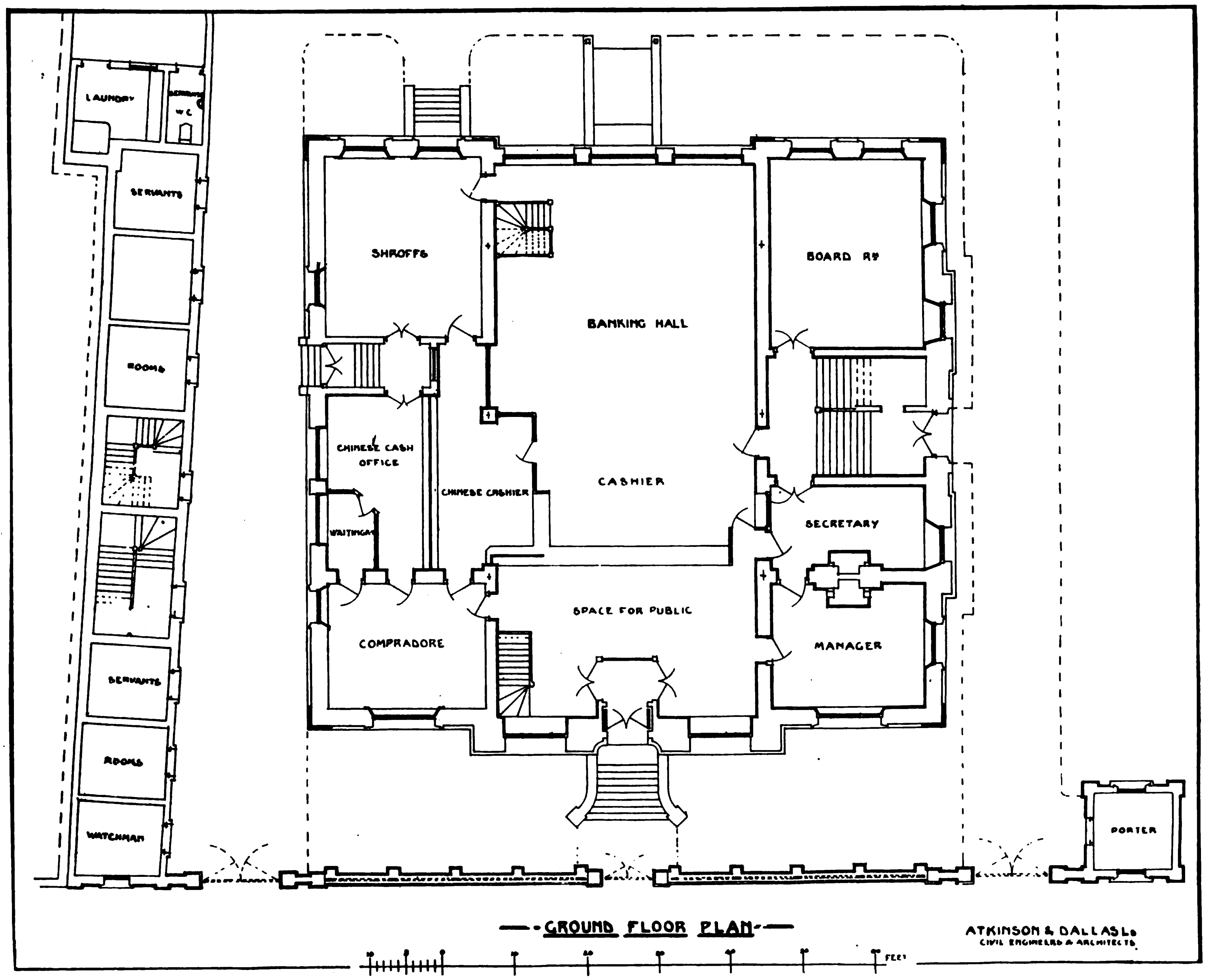


The Banque de l'Indo-Chine, Peking.—Elevation to Legation St. Scale 8ft. to an inch.

the entrance hall. The Banking Hall covers an area of 65' 0" × 66' 0", with a Waiting Room connecting with the Managers Office and Banking Hall. In the rear of the Banking Hall are the Treasury, which is built in reinforced concrete, and capable of storing five million taels, main staircase to residential flats on first and second floors, Compradore Room and Lavatory. The Shroff's office with servants quarters over are arranged in a separate block at the rear of the Bank Building.

The first and second floors are arranged as residential flats for the Bank staff, two on each floor, while a light area 42' 0" × 17' 0" runs up the centre of building, to give light to the Banking Hall and Flats. The light area stops at the ceiling level of Banking Hall and is covered in by a glass dome, thus giving ample light to the Banking Hall.

A public space 51' 0" × 22' 0" is directly opposite the main entrance, while a handsome counter in teakwood runs all round this space. There are six columns in the Banking Hall supporting the walls of upper floors; these columns are treated in the Ionic order with teakwood bases, a portion of the shafts being fluted in teakwood. Pilasters, also in the Ionic order, are arranged on the walls on each side of the Banking Hall between each window. The whole of the ceiling is connected up by beams, with architraves, friezes and cornices, running over the columns and pilasters, thus forming a series of panels. The cornice has enriched modillion blocks, while the members of the cornice are also enriched. All the joinery work is handsomely carried out in teakwood throughout the building. The first and second floors are laid in teakwood parquet, while the ground floor is in teakwood blocks.



The Banque de l'Indo-Chine, Peking.

The ground floor level of the Bank is 4 feet above the pavement level, and marble steps are used to reach the ground floor level.

The roof is flat, reached by the main staircase being continued up.

The foundations are composed of a concrete reinforced raft 2' 6" thick extending over the whole of the site of the building.

ELEVATIONS

The exterior of the building is designed in the Renaissance style of Architecture.

The Bund elevation and the sides of building for a distance of 23 feet are in Soochow granite; the remainder of the side elevations, also the back elevation are in artificial stone.

The ground floor storey is rusticated up to first floor line. The windows have quadrant shaped jambs and semicircular heads, surmounted by nicely carved keystones.

The main entrance is in the Doric order, with detached polished Tsingtau granite columns, the jambs being quadrant shaped, the columns being set in same. There is a massive entrance door in teakwood, with handsome wrought iron gates outside same. The architrave frieze, cornice and pediment are set in a semicircular arch, with carved shields on each side.

A heavy Platz band runs all round the first floor level. The ends of the Bund elevation are in rusticated granite, while the centre portion has two Tsingtau polished granite pilasters and two polished three quarter Tsingtau granite columns between the windows. The columns and pilasters extend two storeys to the main cornice. The Tsingtau granite columns and pilasters have carved caps in the Ionic order, while the main architrave frieze and modillion block cornice are in the same order.

The centre windows to first floor Bund elevation have detached columns, entablature and cornice in Doric order with small balustrade forming balcony, while the two end windows are in the Ironic order. All the first floor windows have circular pediments. The second floor centre windows are in the Doric order, while the two end windows have molded architraves.

The main architrave has the name of the Bank cut in same and gilded over.

There is a balustrade to the flat roof, while at each side there are copings with carved swags and shields.

The side elevations are in artificial stone, in exactly similar style to the Bund elevation described above.

Messrs. Atkinson & Dallas, Ltd. were the Architects for the building.

The New Building of the Banque de l'Indo Chine on the Bund in Shanghai.

THE TIA EUGENIA SUGAR FACTORY, P. I.

The following letter from Sr. Julio Infante, Manager of the Tia Eugenia Factory, Tigbauan, Iloilo, P. I, to Mr. C, Hedemann, Manager of the Honolulu Iron Works, is of interest:—You have requested my opinion in regard to the machinery which your company has sold to Mr. Jose Zulueta, of whose interests I am administrator on this District, and I esteem it a great pleasure to be able to give you the same in this letter.

"I have had the opportunity of inspecting, on various occasions, the different sugar-producing sections of this Island of Panay, and also those of the Island of Negros of the Philippine group; I have had the opportunity of visiting the antiquated as well as the modern sugar mills which exist in both these islands, with the exception of the Central of San Carlos; and I can sincerely affirm that nowhere have I found machinery so complete, so perfect, and which fulfills so satisfactorily its object, as that which you have sold us through the agency of the Pacific Commercial Company.

"The two boilers with which you have provided us are of adequate capacity to operate all the machines composing the factory; the principal engine which moves the crusher and mills is of ample power and capable of operating one mill more; the mills, which are hydraulically regulated, effect a magnificent extraction, and in combination with the boilers achieve the result, astonishing in a plant of this type, of obviating any expense for fuel, since the bagasse is more than sufficient to entirely feed the boilers.

"The arrangement of the clarification and evaporation apparatus, filter presses, vacuum pan, centrifugals and sugar storage department, is of such finished design as to be the admiration of all who have visited the factory, even of those who are at present proprietors of other modern factories, or agents of various sugar machinery houses of Europe.

"I find an unbounded satisfaction in being entrusted with the administration of a plantation which is equipped with a plant like this which you have furnished us.

"I sincerely believe that there can be no harm, that, on the contrary, a great benefit will be conferred on my country, my compatriots and friends, in recommending to the extent of my influence the acquisition of equipment of Honolulu Iron Works Company manufacture by all who may be in need of modern sugar machinery,

"We appreciate, and desire to thank you for, the courteous treatment which you, as well as the Pacific Commercial Company, have extended us, and, personally, I can assure you that I will, on every possible occasion, do all in my power to help you by demonstrating to my countrymen the superior advantages of the Tigbauan factory.

THE UNITED STATES STEEL CORPORATION

The announcement is made that the United States Steel Corporation and its subsidiary companies propose to have a comprehensive exhibit of its operations at the Panama-Pacific Exposition in San Francisco in the year 1915. It will begin with the ore fields and carry on an educative picture of its operations in ore mining, rail and water transportation, dock operations, coal, coke and pig iron production, steel manufacturing in its various lines and will also present in a materially displayed way the processes of manufacturing of many of its subsidiary companies' products; also how it utilizes its by-products and the display of many of the uses in which its general products are employed, typifying the advancement in the uses of this country's resources.

In addition to the material exhibits before mentioned, the Corporation intends to exhibit in a comprehensive manner, by moving pictures, its operations throughout all departments showing the ramifications of the processes of the Corporation's operations. It is proposed as well, to set forth to the world the work which the United States Steel Corporation has done toward the social welfare of its employees and those depending upon them. Also it will exhibit many forms of safety devices that have been conceived by the Corporation officials and its employees, and in the installation of which large sums have been, and are being, expended by the Corporation. In this social welfare department will also be shown the methods employed by the Corporation in the aid and care for the injured and the welfare of employees' conditions at work and the benefits that are aimed to be afforded to employees at their work and in their surroundings. Also the voice that is given to the employees through their committees in bringing about these improved working conditions and the general plans of the Corporation's methods.

FAR EASTERN RAILWAYS

CHINA

Kowloon-Canton Railway.—A Hongkong paper of May 19 reports:—The growth of traffic on the British section of the Kowloon-Canton Railway has necessitated the addition to the rolling stock of a new modern-type British-made locomotive, which arrived from Home last week. The new engine is intended for use on the main line, and is being erected at the Railway Works at Hunghom under the superintendence of the Loco. Superintendent, Mr. C. D. Lambert, it having arrived here in sections. Messrs. Kitson and Co., of Airedale Foundry, Leeds, are the makers of the locomotive, which is of the 2-6-4 side-tank type. It is fitted with leading radial truck, six driving wheels coupled, and a trailing four wheeled bogey. The length over all is 43 feet 10½ inches; and its weight in working order is 90.7 tons. The driving wheels are 5 feet 1½ inches diameter and the radial and bogey wheels 3 feet 7 inches. The cylinders are 19 inches in diameter by 26 inch stroke, and are fitted with Walschaert's valve gear. The heating surface is 1,810 square feet and the tractive force 20,603 lbs., at 75 per cent. of the boiler pressure. The locomotive carries 1,900 gallons of water and 3½ tons of coal. In the matter of gear, one or two experiments are to be tried with this locomotive. It is being fitted with Wakefield mechanical lubricators, which pump oil under pressure to all the bearings and cylinders in the engine, thus doing away with dozens of small oil-boxes. By this arrangement the supply of oil is self-regulated, according to the speed at which the engine is travelling. Another innovation will be the fitting to the front of the locomotive of one of the Pyle National Electric Headlights, of some 25,000 candle power. This light will illumine the track for half a mile ahead, and will be worked by a small turbine and dynamo coupled up to the engine, the light regulating itself. It is expected that this will be of the utmost use on the night trains in typhoon weather, as it will show up, far ahead, any obstructions which may happen to be on the line. The locomotive, which is expected to carry out her steam trials in about three weeks' time, cost about £4,700.

Shanghai-Nanking Railway—The following figures of traffic returns (approximately) for the week ended May 23 are issued by the Shanghai-Nanking Railway:—

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	48,854	11,828	60,682
1913....	45,195	9,615	54,810
Increase.	3,659	2,213	5,872
Decrease	—	—	—

For forty-seven weeks.

Year.	Passengers.	Goods & Sundries	Total
	$	$	$
1914 ...	2,276,235	482,580	2,758,815
1913....	2,043,987	443,876	2,487,863
Increase.	232,248	38,704	270,952
Decrease	—	—	—

Week ended May 30.

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	54,332	13,196	67,528
1913....	42,037	10,306	52,343
Increase.	12,295	2,890	15,185
Decrease	—	—	—

For forty-eight weeks.

Year.	Passengers.	Goods & Sundries.	Total.
	$	$	$
1914....	2,330,567	495,776	2,826,343
1913....	2,086,024	454,182	2,540,206
Increase	244,543	41,594	286,137
Decrease	—	—	—

Week ended June 6.

Year.	Passengers.	Goods & Sundries	Total for the week.
	$	$	$
1914	58,124	16,703	74,827
1913	45,387	10,577	55,964
Increase.	12,737	6,126	18,863
Decrease	—	—	—

For forty-nine weeks.

Year.	Passengers.	Goods & Sundries	Total
	$	$	$
1914....	2,388,691	512,479	2,901,170
1913....	2,131,411	464,459	2,596,170
Increase.	257,280	47,720	305,000
Decrease	—	—	—

Week ended June 13.

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	48,853	18,900	67,753
1913....	48,067	17,001	65,068
Increase.	786	1,290	2,685
Decrease	—	—	—

For fifty weeks.

Year.	Passengers.	Goods & Sundries.	Total.
	$	$	$
1914....	2,437,544	531,379	2,968,923
1913....	2,179,478	481,760	2,661,238
Increase.	258,066	49,619	307,685
Decrease	—	—	—

Week ended June 20.

Year.	Passengers.	Goods & Sundries	Total for the week.
	$	$	$
1914	42,770	11,107	53,877
1913	42,854	10,209	62,063
Increase.	—	—	—
Decrease	0,084	8,102	8,186

For fifty-one weeks.

Year.	Passengers.	Goods & Sundries	Total
	$	$	$
1914....	2,480,314	542,426	3,022,800
1913....	2,222,332	500,069	2,723,301
Increase.	257,982	41,517	299,499
Decrease	—	—	—

MANCHURIA

Penchihu-Niuhsintai Light Line.—The light line starting on the left bank of the Taitzu at the railway bridge near Penchihu, and running for a little over 9 miles to Niuhsintai, where a colliery is located, used to be operated three times both ways daily. As the sidings to Hungchienkou, Wangchiakou, and Hsiaonankou, each about 1½ miles long were completed, the times of running trains, have been increased to eight daily since June 1, making it possible to transport 300 tons of coal a day to Penchihu Railway Station. There are said to be about 80,000 tons of coal in stock at the collieries, and by the new arrangement these heaps of stock will be gradually carried away. A mixed train carrying passengers is being operated twice each way daily, the intermediate stations being Tsuichia, and Wolung. The fare is 7 sen each section, it costing 21 sen a trip between Penchihu and Niuhsintai. The fare on the three sidings is 5 sen for each. The freight rates are 6 sen per ton per mile at the carload rate, 8 sen in ordinary cases, and 6/10-8/10 sen per 100 *kin*.

New Station at Changchun.—The new South Manchuria Railway Station at Changchun was formally opened on June 4.

The main building has the floor area of 632 *tsubo*, and is designed on the Renaissance plan. It is a two-storeyed brick structure, steel-girdered and tile-and asphalt-floored. A flat brick annex stands between the main building and the passenger-car shed. It contains a lavatory, an office for railway guard, a store-room, etc.

Work was begun in March last year. It cost about Y. 200,000.

South Manchuria Railway Company.—The *Manchuria Daily News* understands that the Directorate of the S. M. R. Co. has fixed upon its policy *re* the Company's enterprises for the present fiscal year within the bounds of the Company's estimates which the Tokyo Government approved of with the concurrence of the Imperial Diet. It is gleaned that all fresh undertakings which are held as comparatively less urgent have been decided to be postponed to the succeeding years, although a positive policy will be adhered to in all business enterprises. Some substantial changes are said to have been made in the estimates, including the postponement of the reconstruction of the Dairen Railway Station.

The Y500,000 yen loan borrowed by the Chinese authorities at Mukden from the S. M. R. Co. last year fell due at the end of May, but the extension of the term by another year has been agreed upon.

The exact amount of the S. M. R. traffic earnings during the last fiscal year was Y22,275,132, being an increase by Y2,367,676 on the preceding fiscal year. The passenger receipts totalled Y5,069,127 and the freight receipts Y16,159,171.

JAPAN

Yokohama Station.—When the new Railway Station at Yokohama is completed in March next year, it will be an attractive feature in the bay city, says a Tokyo paper. The station is entirely a stone and brick structure, modelled in the Renaissance style, and is two stories high. The new station faces the town of Yokohama in front, with the Tokyo-Yokohama electric railway line of the Imperial Railway Board on its right, and with the main track of the Tokaido line in the rear. On the ground floor are ticket office, parcels office, and the offices of the station master and the office force. Passengers will get their tickets on the ground floor, and go upstairs, where the waiting rooms for the First, Second and Third Class, and for women, and a dining hall are provided. From these waiting rooms, passengers can descend, across bridges, direct to the train or to the electric railway track. Lavatories and dressing rooms are also provided upstairs, and in its equipment and general arrangements, the new building will surpass the present one.

SIAM

The Southern Railways.—On the first of June next the Southern line was, we learn, to open to traffic the section from Wong Phong to Pranburi, while the section from Nagor Sridammaraj to Tungsong will be opened to traffic on the 1st of September, says the *Siam Observer*. The Southern Line, it is stated, has in contemplation the erection of offices for itself near the station at Bangkok Noi.

Railway Contracts.—A consular report states that tenders were invited from the leading British, American, Belgian, and German structural engineering firms by the Royal State Railways of Siam for the delivery at Bangkok and Chumpone of 43 open lattice type girder bridges, required for the extension of the northern section of the Siamese State Railways to Chiengmai, a distance of 220 kilometres. Although Siam has hitherto ordered most of its locomotive and railway rolling stock equipment from Germany, this steel-work will be obtained from Great Britain. The designs submitted by an English firm were considered by the consulting engineers to the Siamese Government to be the most satisfactory of all submitted, and the contract for the whole of the work has therefore now been awarded to this firm.

GENERAL

Pervaya Ryechka-Cape Churkin Branch.—In order to afford greater convenience to shippers of freight and to shorten communication between the railway and the wharves at Vladivostok a branch line is to be constructed from the station Pervaya Ryechka, near Vladivostok, to Cape Churkin, for which purpose the Government has appropriated the sum of Rls. 3,500,000.

SHIPBUILDING

Hongkong and Whampoa Dock Co.—On May 29 the steamer *Senang*, built for the Senang Steamship Co., was successfully launched at the Hongkong and Whampoa Co.'s dock. The vessel will trade between Netherlands—India and China Coast ports.

The *Senang* is a handsomely modelled steel single-screw steamer, length 245 feet overall, beam 38 feet, depth moulded 16 feet 6 inches. Of the single deck type, with top-gallant forecastle and continuous poop and bridge, combined with long boat decks and navigating bridge, she presents quite a trim appearance. Though primarily intended as a general cargo and passenger steamer, provision has been made for large measurement freight, the holds being absolutely void of obstruction. This may be said to be a special feature of the structural design. In lieu of the customary hold pillars, continuous steel girders are worked under deck at the hatch sides, being supported by strong beams, which in turn transmit any stresses to the ship's structure in a gradual manner through deep arched web frames. For the rapid loading and discharging of cargo, four powerful winches and two steam cranes are installed on the bridge deck. Water ballast may be carried in either peak tank and in the cellular double-bottom, which extends throughout the vessel. Ample accommodation is provided for the passengers and crew, all fittings, including electric light and fans, being of the most up to date style. The life-saving appliances are 25 per cent. in excess of British Board of Trade requirements. The machinery, fitted amidships, consists of one set of triple expansion engines, having cylinders 18 inches, 29 inches and 48 inches diameter, stroke 36 inches, and two single-ended boilers 12 feet 9 inches diameter, 10 feet 6 inches long, supplying steam at 180 lbs. working pressure, natural draught. To ensure her being thoroughly efficient and seaworthy, the designer, Captain Kockx, has had the vessel classed 100 A1, under special survey, by Mr. J. Lambert, surveyor to Lloyd's Register; also built to Board of Trade rules and regulations. When laden to the disc., it is anticipated that the deadweight carrying capacity of the *Senang* will be 1,725 tons.

Shanghai Dock and Engineering Co., Ltd.—A steel sea-going tow-boat, the *Brodie Clarke*, built by the Shanghai Dock and Engineering Company, Ltd., for the Kochien Transportation and Tow Boat Co., Ltd., was successfully launched on May 27, the christening ceremony being performed by Miss Sutherland. The new vessel, which is constructed in accordance with Lloyd's requirements for their highest class for sea-going tow-boats, measures 147'0" in length, 26'6" in moulded breadth, and 16'6" in moulded depth. She is built with a forecastle forward and long bridge-deck amidships. On the bridge-deck a steel house is constructed for the accommodation of the captain, with a wheel house placed at the forward end. Underneath on the main-deck a saloon, with stateroom accommodation for the officers, is constructed, also the usual galley-stores and space for salvage gear. Accommodation for the crew, in keeping with this class of vessel, is fitted up in the after tween-deck.

The ship has electric lights and search light installed, and is fitted with steam steering-gear, steam windlass and capstan at the forward end, and steam capstan at the after end. The propelling machinery consists of one set of triple-expansion, surface-condensing engines, capable of developing 1,200 indicated horse power, with the usual pumps, feed-heater, and independent feed pumps, and general service and fire pumps. The steam is generated in two large cylindrical multitubular boilers, fitted with forced draught. The machinery is arranged so that the vessel can undertake harbor work with only one boiler in commission, giving 600 I. H. P., or two boilers if desired, giving the full 1200 I. H. P. The whole of the machinery, boilers, windlass, steering gear, etc., has been constructed in the Dock Co's. own workshops.

The Kawasaki Dockyard.—Mr. Y. Kawasaki, President of the Company, has made the following statement to a press representative:—The Kawasaki Shipbuilding Company is on the strongest possible basis financially and it is not conducting negotiations with any bank for a loan. In connection with the construction of the battleship No. 5, the Company received an order from the Government to make ready the necessary materials costing 1,350,000 yen. Even if the construction of this ship be suspended, the Company would not discharge its employees as the company would not be put into trouble through this suspension. At present 12,000 men are employed in the yard, and they are fully occupied for various kinds of works. The principal works now on hand are the building of the warship Haruna, of 27,500 tons, the N. Y. K. steamer Yasaka Maru, 12,000 tons, to be used on the European service, the Tokuyama Maru, 7,500 tons, and the Toyohashi Maru, 7,500 tons, to be used on the American line, the Osaka Shosen Kaisha steamer Harbin Maru, 5,500 tons, to be used on the Dairen service, another vessel of 9,500 tons for the American service, and another of 2,500 tons for the North China service. Besides the above, the Company is making 72 engines and several hundred passenger carriages to order from the Government Railway Board.

IRRIGATION, ETC.

Penchihu Water Supply.—The construction of waterworks at Penchihu on the Mukden-Antung Line, was started in 1912. The supply service was commenced in January last year. The only portion of the work to be finished is the installation of private connections for the subscribers. This work will be completed by next September. The service is open by means of public hydrants on the water-ticket system. The rate is ludicrously cheap, costing only ⅛ sen per pair of oil cans. According to mining experts, as the mining operations are extended further down underground, the wells in that town which give good clear water will become gradually dry, and the necessity for a waterworks service is bound to assert itself. The construction of the service cost Y.200,000. It is capable of supplying a population of 40,000. The supply is derived from the Taitzu, and is raised to a tank 150 feet above the level of the surface of the River. The present population of the town is 2,200.

IRON AND STEEL

Tsingtao Iron Works.—A telegram from Berlin dated June 5 says:—The annual meeting of the Shantung Railway Company has passed a resolution authorizing an increase of the capital of the Company by Mks. 10,000,000, in order to erect iron and steel works at Tsangkow near Tsingtao.

MINING

The Fushun Colliery.—The management of the Fushun Collieries started on April 6 the excavation of an open cast at Kuchengtzu where the coal seam is accessible at only 24 ft. underground. The seam was reached on May 28th. It may be that this part of the seam was once beneath the river-bed of the Hun. The quality of the coal on the surface is found to be rather indifferent, but as it goes down deeper an improvement in quality is expected. At the outset, an area of about 5,000 *tsubo* is to be cleared of the earth, etc., over the coal seam. The clearings are estimated to be about 20,000 cubic *tsubo*, and a gang of about 1,000 coolies are now kept at work for the removal of the earth, etc. At the present rate of progress, the seam will be exposed for excavation over the whole area allotted for the purpose by the end of August. Steam shovels will be brought into play shortly to commence mining operations. The mining area will be extended gradually westward. This novel mining method has been resorted to with the object of meeting a shortage in supply which will be experienced as a sequel to the execution of the sand-flushing plan in the existing shafts and pits.

Kailan Mining Administration.—The total output of the Administration's mines for the week ended May 16, amounted to 64,850.64 tons and the sales during the same period to 58,420.20 tons.

Week ended May 23, output 62,735.05 tons, sales 72,080.47 tons.

Week ended May 30, output 59,143.63 tons, sales 43,131.10 tons.

Week ended June 6, output 59,572.90 tons, sales 66,070.55 tons.

Week ended June 13, output 63,177.31 tons, sales 46,419.30 tons.

TRAMWAYS

Shanghai Tramways.—The returns of the Shanghai Tramways (Foreign Settlement) for the week ended May 27, are as under:—

	1914.	1913
	$	$
Effective receipts (after deducting loss by deprecia-tion of subsidiary coinage)	19,258.36	14,878.78
Passengers carried. . .	1,061,829	761,466
Car miles run	63,786	51,884

The loss by depreciation of subsidiary coinage for the week was $6,127.91 equal to 25.50 per cent. of the gross cash collected on the cars as compared with $4,207.62, equal to 23.44 per cent. for the corresponding week last year.

For the month of May 1914, and for five months ended May 31, 1914, with figures for the corresponding periods last year:—

	May, 1914.	May, 1913
	$	$
Effective receipts	86,710.50	75,821.18
Passengers carried	4,737,250	3,848,956
Car miles run	281,466	235,727
Loss by depreciation of subsidiary coinage. ..	27,436.80	21,715.61
Percentage of loss by depreciation of sub-sidiary coinage.	25.34	23.49

	five months ended May 31, 1914	five months ended May 31, 1913.
	$	$
Effective receipts	406,422.10	346,276.09
Passengers carried	21,582,944	17,270,360
Car miles run	1,311,207	1,099,619
Loss by depreciation of subsidiary coinage ..	120,655.60	94,462.98
Percentage of loss by de-preciation of subsidiary coinage	24.19	22.76

Week ended June 3.

	1914.	1913.
	$	$
Effective receipts (after deducting loss by de-preciation of subsidiary coinage)	21,547.24	15,897.79
Passengers carried. . .	1,224,824	817,282
Car miles run	66,976	54,385

The loss by depreciation of subsidiary coinage for the week was $7,014.90 equal to 25.81 per cent. of the gross cash collected on the cars as compared with $4,542.14 equal to 23.51 per cent. for the corresponding week last year.

Week ended June 10.

	1914.	1913.
	$	$
Effective receipts (after deducting loss by de-preciation of subsidiary coinage)	19,941.91	19,598.53
Passengers carried. . .	1,171,407	1,027,802
Car miles run	67,520	57,455

The loss by depreciation of subsidiary coinage for the week was $6,398.81 equal to 25.82 per cent. of the gross cash collected on the cars as compared with $5,631.31 equal to 23.44 per cent. for the corresponding week last year.

Week ended June 17.

	1914.	1913.
	$	$
Effective receipts (after deducting loss by deprecia-tion of subsidiary coinage)	17,954.64	19,064.99
Passenger carried. . . .	1,052,201	1,018,885
Car miles run	66,715	64,423

The loss by depreciation of subsidiary coinage for the week was $5,781.11 equal to 26.08 per cent. of the gross cash collected on the cars as compared with $5,411.76 equal to 23.28 per cent. for the corresponding week last year.

Week ended June 24.

	1914.	1913.
	$	$
Effective receipts (after deducting loss by deprecia-tion of subsidiary coinage)	18,873.43	17,412.67
Passengers carried . . .	1,110,314	924,051
Car miles run	67,046	60,995

The loss by depreciation of subsidiary coinage for the week was $6,071.34 equal to 26.02 per cent. of the gross cash collected on the cars as compared with $4,914.61 equal to 23.22 per cent. for the corresponding week last year.

COMPANIES

Amagasaki Cotton Spinning Co. (Japan).—The profit and loss account is as follows:—

	Yen
Net profit for the term	785,256.49
Brought over from last account ..	758,614.12
Total	1,543,870.62
To be distributed:	
Loss reserve	50,000.00
Secondary reserve	50,000.00
Bonuses for directors and auditors.	78,500.00
Dividend at 20 per cent. per annum	284,000.00
Special dividend at 10 per cent. per annum	142,000.00
Carried forward to next account ..	939,370.62

Sino-Japanese Cotton Spinning Co.—The profit and loss account is as follows:—

	Yen.
Net profit for the term..	62,226
Brought over from last account ..	91,412
Total	153,638
To be distributed:—	
Legal reserve	3,200
Secondary reserve	6,500
Bonuses	5,000
Dividend	88,000
Carried forward to next account ..	50,938

Peak Tramways Co., Ltd.—The report of the directors and statement of accounts for the year ending April 30, 1914, was as follows:—

The net profit for the twelve months, after deducting directors' fees and general managers' remuneration and providing for loss on subsidiary coins, amounts to	$36,891.79
To which has to be added the balance brought forward from last account	1,350.31
Making available for appropriation..	$38,242.10

The directors recommend that a dividend at the rate of 8 per cent. per annum be paid to shareholders, absorbing $24,000; that $10,000 be transferred to reserve fund; that $2,000 be written off stations and shelters; and that the balance of $2,242.10 be carried to a new profit and loss account.

Oriental Development Co.—This company's statement of accounts for the term just closed is as follows:—

	Yen.
Net profit for the term	804,498
Brought over from last account ...	586,902
Total...	1,391,400
To be distributed:—	
Loss reserve	96,600
Dividend equalization fund	32,200
Bonuses and social expenses	40,000
Dividend at 7 per cent per annum ...	690,000
Carried forward to next account ...	532,600

Japan Tannery Co.—This company's statement of account for the term closed on March 31 was as follows:—

	Yen.
Net profit for the term	174,922.19
Carried over from last account ...	67,585.51
Total	242,507.70
To be distributed:—	
Legal reserve	10,000.00
Sinking fund for fixed capital ...	15,000.00
Secondary reserve	15,000.00
Bonuses for auditors and directors, and social expenses...	12,500.00
Dividend at 10 per cent. per annum	125,000.00
Carried forward to next account ...	65,007.70

Hongkong Electric Co., Ltd.—The directors recommended the following distribution of profit for the past term:—

A dividend of $1.80 per share...	...$108,000,00
Place to reserve	70,000.00
Write off plant account for depreciation	121,562.90
Write off property account for depreciation	25,000.00
Write off furniture account for depreciation	530.53
Pay a bonus to staff	6,283.38
Carry forward to next account ...	31,668.18
	$363,044.97

Canton Insurance Office Ltd.—The statement of the affairs of the Office made up to 31st December, 1913 is as follows:—

1912 Account.—After paying an interim dividend of $18 per share on May 22, 1913, the amount standing to the credit of this account is $503,980.66.

This, it is resolved to deal with in the following manner:—

To pay a final dividend of $3 per share	...$ 30,000.00
To add to Investment and Exchange Fluctuation Account	40,000.00
To add to Reserve Fund	100,000.00
To add to Reinsurance Fund	190,000.00
To add to Underwriting Suspense Account to close the Account for year 1912	143,980.66
	$503,980.66

1913 Account.—The amount standing at credit of this Account is $1,514,257.78. Out of this the General Agents and Consulting Committee have declared an interim dividend of $18 per share absorbing $180,000. The balance of $1,334,257.78 will be carried forward.

Indo-China S. N. Co., Ltd.—The Annual General Meeting of the Indo-China S. N. Co., Ltd., was held in London on June 12. Balance of underwriting account was £83,459; £5,000 has been written off Debenture expenses and after providing for all expenses, usual depreciation and dividend paid February, the available balance was £43,008.15. The Board of Directors recommended payment of balance of 3 per cent. dividend on Preference Shares for the year 1913 and 5 per cent. dividend on Ordinary Shares. To be transferred to credit of underwriting account £8,173.—and carry forward £15,000.

S. Moutrie & Co., Ltd., (Shanghai).—The report of the directors for the year ended March 31, 1914 states that the net profits, including the amount brought forward from last year's working, amount to $76,098.13, which sum the directors recommended be divided as follows:—

	$
To pay a dividend of 10 per cent.	30,840.00
Commission to managing director, acting manager, and Bonus to foreign staff	7,385.00
To place to reserve	25,000.00
To carry forward to new account	12,873.13
	$76,098.13

A. S. Watson & Co., Ltd., (Hongkong).—The report for the year ended December 31, 1913 was as follows:—The net

profits of the Company for the twelve months under review, after paying all charges, including the salary of the General Managers, and providing for all bad and doubtful debts, allowing for loss on subsidiary coins, the payment of auditors' fees $500, and including $975.90 unclaimed dividends forfeited, amount to...		$100,920.59
To which has to be added the balance brought forward from the previous year..........................		240.11
		$101,160.70
From this there has to be deducted:—		
General Managers' Commission of 5 per cent. on the net profits for the year......................	$5,046,02	
Remuneration of the Consulting Committee	2,000.00	
		7,046.02
Leaving available for appropriation		$94,114,68
We propose to pay a dividend of 7 per cent., which will absorb........	$63,000.00	
Write off Building Improvements, Furniture, Fittings, Utensils of Trade......................	11,000.00	
Write off Aerated Water and other Plant and Machinery	13,000.00	
Write off Steam Launch, Steam Lighter, Water Boats and Motor Lorry	6,000.00	
	$30,000.00	
And carry forward to 1914 account...............	1,114.68	
		$94,114.68

PERSONAL

Mr. Rigby, District Engineer of the Peking-Mukden Railway at Fengtai, has been promoted to be assistant Engineer-in-chief *vice* Mr. Cox, now Engineer-in-chief of the Canton-Hankow line. Mr. Farrant, district Engineer at Yinkow, has been transferred to Fengtai.

The Commissioner of Customs at Canton, Mr. Maze, and the Commissioner of Kowloon Customs, Mr. Lowder have been given the Third Class Chia-ho Decorations. The former Acting Commissioner of Samshui Customs, Herr von Rautenfield, has received the Fourth Class Chia-ho Decoration. The Deputy Commissioners of Canton Customs, Mr. Guernier, has received the Fifth Class Chia-ho Decoration, and the Assistants of the Canton Customs, Messrs. Sharples and Schregardus, the Sixth Class Chia-ho Decorations.

Mr. Hoare, the successor to Sir Somerville Head as third secretary at the British Legation, at Peking has taken up his duties.

Mr. A. H. Collinson, lately Engineer-in chief of the Canton-Hankow Railway, has gone to the north of Japan, to examine into timber production with special reference to the prospects of railway sleepers. Upon the completion of his investigations in the Hokkaido, Mr. Collinson is going to London to join a prominent firm of consulting engineers, who have interests in China.

Mr. W. Brattzow, Russian Vice-Consul at Shanghai, has been promoted to the rank of Consul and transferred to Kirin. His successor will be Mr. A V oznecienski, for some time Vice-Consul at Hankow.

Mr. William Henry Stone, Adviser to the Department of Communications in Tokyo, has been decorated by the Emperor of Japan with the First-class Order of Merit in appreciation of services rendered in developing the means of communication, and especially in the acquisition of the privilege of laying a cable between Japan and Shanghai.

Mr. Alfred Sze (Shih Shao-chi) has been appointed Chinese Minister to Great Britain.

Mr. C. R. Burkill has accepted an invitation to serve on the Electricity Committee of the Shanghai Municipal Council.

Dr. T. J. N. Gatrell has received an appointment as Foreign Secretary to the Chinese Salt Administration, carrying with it a salary of about $1,000 per month. Dr. Gatrell is at present absent on furlough.

Dr. Morrison, Political Adviser to President Yuan Shih-kai, left Peking on leave of absence on June 10. He will visit England and Canada. Before leaving the President bestowed upon him the First Class Chiaho decoration.

Mr. Frank Grove, M.I.C.E., Engineer-in-Chief of the Chinese section of the Canton-Kowloon Railway, has been appointed Engineer-in-Chief of the projected Nanking-Changsha Line. He will be succeeded at Canton by Mr. Foord, former Engineer in Chief of the Shanghai-Hangchow Railway.

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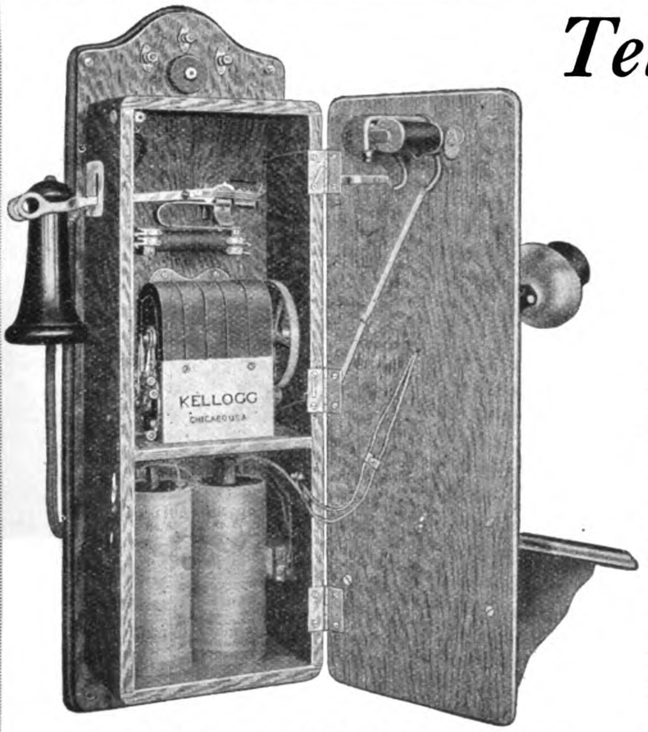

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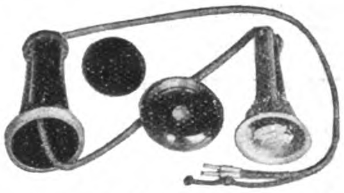

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Fearon, Daniel & Co.
General Electric Co
Melchers & Co.
Shewan, Tomes & Co.
Siemens China Electric Eng. Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.
Western Electric Co.

Engines
Bellis & Morcom (D. W. Bell)
Shanghai Dock & Engineering Co., Ltd.
A. F. Craig & Co.

Excavators and Elevators
Priestman Bros. Ltd.
Rose, Downs & Thompson, Ltd.
Shanghai Dock & Engineering Co., Ltd.
Austin Drainage Excavator Co.

Explosives
Jardine, Matheson & Co.
Arnhold, Karberg & Co.
Rendrock Powder Co.

Fan Blowers
Drysdale & Co.

Feed Water Heaters
Babcock & Wilcox Ltd.

Food Products
Anderson & Co., W. H.

Gas Engines
Melchers & Co.
Campbell Gas Engine Co., Ltd., The

Graphite Paint
J. Dampney & Co.

High Speed Engines
Drysdale & Co.

Hose
F. Reddaway & Co., Fire Hose " Sphincter Grip," Armoured Hose, etc.

Ice Machinery
Vulcan Iron Works
Melchers & Co.

Insurance
Stevenson & Co., Ltd., W. F.

Ironfounders
A. F. Craig & Co.

Life Insurance
China Mutual Life Insurance Co., Ltd.

Locks
Yale & Towne Mfg. Co.

Locomotive Speed Indicator and Recorder
Hasler Telegraph Works.

Lubricants
Albany Lubricating Co.

Lumber Dealers
Robert Dollar Co.
Jardine, Matheson & Co.

Machinery Merchants
Andersen, Meyer & Co.
Arnhold, Karberg & Co.
Shanghai Machine Co.
Fearon, Daniel & Co.
Frank L. Strong
Schuchardt & Schutte.
Shanghai Dock & Engineering Co., Ltd.
Samuel & Co., Ltd.
Tulloch & Co.

Mechanical Rubber Goods
F. Reddaway & Co.

Mill Machinery
Rose Downs & Thompson Ltd.
Shanghai Dock & Engineering Co., Ltd.
A. F. Craig & Co., Ltd.

Mining Machinery
Melchers & Co.
Shanghai Dock & Engineering Co., Ltd.
Shewan, Tomes & Co.

Mineral Oil Plants & Machinery
A. F. Craig & Co.

Motors
Shanghai Dock & Engineering Co., Ltd.
Pratt's

Motor Tyres
F. Reddaway & Co.

Motor Launches
Shanghai Dock & Engineering Co., Ltd.

Paints Oils and Varnish
Standard Oil
Albany Lubricating Co.
F. A. Vander Loo & Co.
J. Dampney & Co.

Packings
F. Reddaway & Co.
Greene Tweed & Co.

Pulleys (Steel)
Schuchardt & Schütte
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.

Pumps
The Goulds Manufacturing Co.
Shewan, Tomes & Co.
Jardine, Matheson & Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
Joseph Evans & Sons

Railroads
Chinese Government Railways
Manila Railroad Co.
South Manchuria
Southern Pacific Co.
Chosen (Korea) Railways.

Railroad Supplies
American Locomotive Co.
Andersen, Meyer & Co.
Arnhold, Karberg & Co.
Baldwin Locomotive Work.
Fearon, Daniel & Co.
Hannoversche Maschinenbau A. G. Vormals Georg Egestorff.
Henschel & Sohn.
P. Herbrand & Co.
Jardine, Matheson & Co., Ltd.
Melchers & Co.
Shewan, Tomes & Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
Tyer & Co.
U. S. Steel Products Co.
Railway Signal Co., Ltd., The
Robert Dollar Co.
Samuel & Co., Ltd.
Dick, Kerr & Co., Ltd.
Siemssen & Co.

Reinforced Concrete Construction
Shanghai Dock & Engineering Co., Ltd.
Trussed Concrete Steel Co.
U. S. Steel Products Co.

Roofing Paper
California Manila Lumber Commercial Co

Rope Manufacturers
Johnson-Pickett Rope Co.
U. S. Steel Products Co.
Ynchausti & Co.
Shewan Tomes & Co.

Ship-Chandlery
Ynchausti & Co.

Shipping Agents
Cia. General de Tabacos
Shewan, Tomes & Co.
Stevenson & Co., Ltd.

Shipbuilding and Repairs
Fiat-san Giorgio Ltd.
Tsingtauer Werft
Hongkong & Whampoa Dock Co., Ltd.
Mitsu Bishi Dock and Engineering Works
Shanghai Dock and Engineering Co., Ltd.
The Taikoo Dockyard and Engineering Company of Hongkong, Limited

Steamship Companies
Cia. General de Tabacos
Pacific Mail S. S. Co.
Ynchausti & Co.
Toyo Kisen Kaisha.

Steel Manufacturers
United States Steel Products Export Co.

Steel Works
Bohler Bros. & Co., Ltd.
U. S. Steel Products Co.

Stokers
Babcock & Wilcox Ltd.

Structural Steel
Bohler Bros. & Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.

Sugar Machinery
A. F. Craig & Co.

Superheaters
Babcock & Wilcox Ltd.

Tanks
Pacific Tank and Pipe Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.
A. F. Craig & Co.

Telephones
The Western Electric Co.

Textile Machinery
A. F. Craig & Co.

Tiles and Bricks
Green Island Cement Co., Ltd.
Chinese Eng. Mining Co.

Tobacco Dealers
British-American Tobacco Co., Ltd.
Cia. General de Tabacos
Olsen & Co., Walter E.

Tools
American Tool Works Co.
Lodge & Shipley Machine Tool Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.

Windmills
Defiance Machine Works.

Water Softeners
Babcock & Wilcox Ltd.

Wood Working Machinery
American Tool Works Co.
Defiance Machine Works.
Lodge & Shipley Machine Tool Co.
Shanghai Dock & Engineering Co., Ltd.

THE FAR EASTERN REVIEW
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THE PROPOSED RAILWAY FROM NANKING TO PINGSIANG

REPORT OF SURVEYOR'S RECONNAISSANCE

Mr. H. T. Foord, accompanied by Mr. S. B. Shen, and several student surveyors, recently completed a reconnaissance survey for a railway from Nanking to Pingsiang through Nanchang, the capital of Kiangsi Province.

The total length of the railway is estimated at 643 miles including the branch line from Loping to Kingtehchen and the estimated cost of construction and equipment is £7,608,925, or £11,833 per mile.

In setting about the survey of this line Mr. Foord kept very prominently in mind the probable future development of railway activity in the territory embraced by Chekiang, Anhui, Kiangsi and immediate provinces, and, in the excellent map which he drew for the information of the Ministry of Communications, he elaborated with considerable foresight what, in future, are likely to develop into trunk railways. Mr. Foord, as an engineer, felt it to be essential that the question of future trunk lines should be taken closely into consideration when discussing the construction of the line from Nanking to Pingsiang, providing that those parts of it which will form sections of the eventual trunk lines should be built with easy gradients and curves, and saving money by constructing in a cheaper way those parts which may for the sake of diction be termed light railways.

On his map, Mr. Foord indicates that the railway lines now running from Nanking to Shanghai and from Shanghai to Hangchow should be continued as a trunk line southwestwards to Yenchowfu and on through to Chuchowfu, across the provincial boundary of Chekiang into Kiangsi province and to Kwanghsinfu along the valley of the Kin-kiang river where it should connect with the proposed line from Nanking to Nanchang, about 50 miles to the east of Nanchang. The trunk line should then proceed from Nanchang to Juichowfu and direct westwards to Changsha. Two other trunk lines are also shown converging on Nanchang from the south, one from Foochow, another from Canton; while the line now in course of construction from Nanchang to Kiukiang would ultimately find continuation to the north of the Yangtsze between and ultimately joining the Peking-Hankow and the Tientsin-Pukow lines.

Whether these railways will be built in the lifetime of the present generation cannot be said, but efficiency in Chinese railway schemes is only to be secured by such foresight as Mr. Foord displays. In view of the possibilities of trunk line extension, Mr. Foord is of the opinion that it would be wise to make the Nanking-Changsha line a light railway to within, say, 50 miles of Nanchang. From Nanchang to Changsha two routes are possible, one direct to Changsha, the other striking south to Fengcheng and Changshu, then following the Siukiang valley almost as far as Pingsiang, where it would join up with a line already in operation between Pingsiang and Chuchow, junctioning there with the trunk line from Wuchang to Canton. If the latter route is taken Mr. Foord is of opinion that the first 60 miles from Nanchang should be built as portion of a trunk railway which is destined, ultimately, to connect with Canton, and then from a few miles south of Chuchow extend to Pingsiang as a light railway.

The Ministry of Communications would act wisely in giving close consideration to the map of South Central China which Mr. Foord has prepared. Mr. Foord deserves congratulation for emphasising the relations existing between present day and future construction of railways in the country.

After examining the route which he was engaged in reconnoitring, Mr. Foord came to the conclusion that it would be well to utilize the present short railway existing in Nanking, and known as the Nanking City Railway, as the starting point for the line from Nanking to Nanchang. Though that line is not at present in good order and has no junction with the Shanghai-Nanking Railway, the latter could be effected at very little expense while the former would be worth the money which may be necessary to place it in a state fit to carry heavy and through traffic.

Mr. Foord reports that the line divides itself naturally into three sections, the first of which from Nanking to Hweichowfu, a distance of about 205 miles, is for the most part through fairly easy country, with the exception of one divide shortly before reaching the latter town.

Up to Ningkwofu the route passes through rolling country or flat plain, the most important towns on the way being Molingkwan, Chaochienyu, Kaoshun and Singhuchong.

This part is thickly populated, and, although there is no important staple product with the exception of rice, there is a prospect of a fairly remunerative traffic. The rice trade centres mainly round Kaoshun, but the rice, which is of the second quality, is mostly taken by boats to Wusieh and Soochow, on the Shanghai-Nanking Railway.

Ningkwofu is a large and wealthy town, and a considerable passenger and goods traffic will certainly spring up between it and Nanking, as it will be only about four hours distant by railway. There is, however, competition by water, as a steam launch runs during the summer months to Wuhu, and there is also the Wuhu Railway to be considered, the distance from Ningkwofu to Wuhu being less than half the distance to Nanking. This line upon which construction was commenced some years ago is at present in abeyance, but it is certain, sooner or later. to be built.

An outcrop of coal exists to the east of Ningkwofu, but it appears to be of a poor quality, hard, and with very little flame, though it cannot be judged definitely from samples taken from the outcrop only.

There is an excellent site for a station just outside the east gate of the city, level ground which would not be required to be raised much and close to the business quarter and the river.

Beyond Ningkwofu there are two roads to Hweichowfu, following two nearly parallel valleys, about 40 miles apart, at their greatest divergence. The Western route is most used and more business passes that way.

The neighbourhood of this road itself is impracticable for the railway, which would have to follow the valley further to the right. The route through Ningkwohsien is easier and holds out just as good prospects of traffic.

All this country is full of ruins indicating its former prosperity, but it is said to have never recovered from the Taiping Rebellion, when it was practically depopulated.

The line is easy up to the watershed which separates the rivers flowing into the Yangtse from those which flow through Chekiang. This point is reached about 23 miles South of Hweichowfu, and the valleys leading up to it on both sides are very narrow and tortuous.

The ridge could be crossed without a tunnel, or with a very short one, if a gradient of 1 in 50 were employed, but the engineer feels that such would be bad policy on this section of the line. He is of opinion that the maximum gradient should not be steeper than 1 in 100, in which case a tunnel about three quarters of a mile long would be required, but it is almost sure that this could be materially reduced by a very careful survey before fixing the actual location of the line.

The distance from Shanghai by rail, via Nanking, would be roughly 400 miles, and via Changchow would be not more than half the distance, besides which the line, being without any severe gradient or heavy works, would be much cheaper to run, and, consequently, freights could be fixed at a much lower figure.

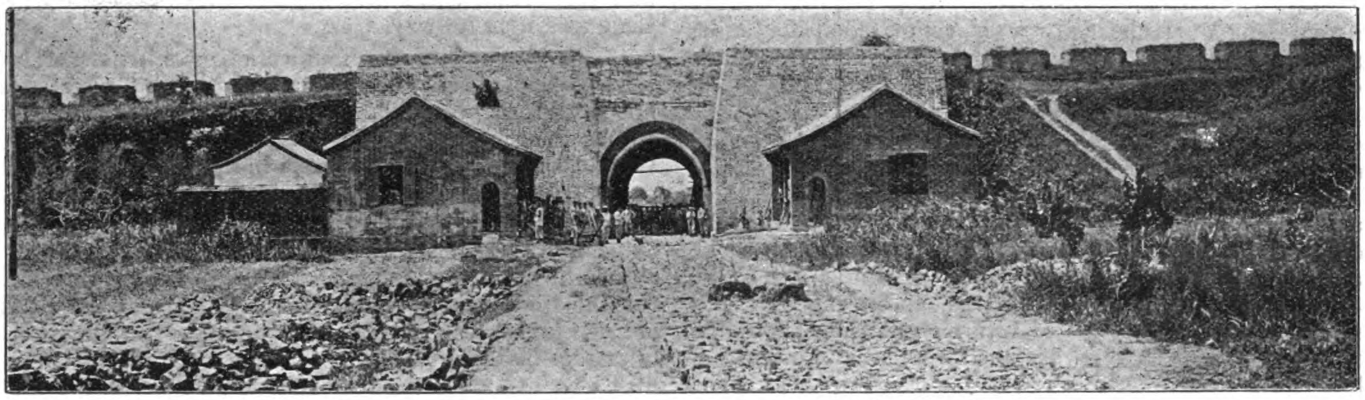
The line from Nanking to Hweichow would pay for itself by the local traffic which it would develop, and it would open up a stretch of country containing great possibilities, but it never is likely to form part of a trunk line carrying through traffic.

The station for Hweichow might be placed outside the West Gate of the town where is the only level ground, but this would cost a good deal to raise and protect, as two sides of it would be washed by the river when in flood.

The second section of the railway from Hweichow to Nanchang is for half the distance through a very mountainous country, the principal formation of which is a hard dark shale which makes it unlikely that any minerals will be discovered there. It is cut up into narrow, winding valleys by numerous streams, the hills rising in most cases from the water's edge without any flat ground between. The climate is warm and damp, and it is on the sides of these hills that tea is grown, particularly on the Southern and Western sides of the watershed.

It is essential that the railway should pass Tunki, one of the largest and busiest towns in the territory, and up to here and for some distance beyond, the country is level and easy, whichever route is finally adopted.

Mr. Foord, on his way westwards, first examined the most southerly valley, which leads up to a pass near Litakun, where



NANKING CITY RAILWAY.—Opening in the city wall for the railway.

a tunnel about 2¼ miles in length is unavoidable. Then for many miles, as far as Wuyuan the valley is very narrow and difficult; after that the hills become lower, the shale formation giving place to red-stone, with room, in most places, to get the railway between the river and the foot of the hills.

After crossing the summit the line descends into a narrow valley which widens out into a flat plain for the last fifteen miles before Hweichow, and this is highly cultivated and thickly populated.

Coal outcrops at intervals all the way from Ningkwofu to Hweichow, and, near Linchi, a very fine quality of anthracite is found. Gold, silver, copper and iron are also said to exist in this district.

Hweichowfu is not a very important town from a business point of view, but its position at the head of the navigable river leading to Hangchow, and at the point of junction of several other streams which are navigable in the summer, marks it out as certain to be eventually the meeting place of several lines of railway when the country is more developed. It is perhaps best known as the headquarters of the Chinese ink industry, but this is a very small trade where freights are in question.

The whole of the trade of this district right up to the watershed which roughly divides Southern Anhui from Kiangsi, finds its way to Shanghai, via the Tsien Tang River and Hangchow, the latter place being only three days' distance by boat from Hweichowfu.

It is not at all an easy matter to divert the ancient course of trade and force it to take a new route, and this can only be done by offering facilities markedly superior to those of the old route.

Nanking, if it was ever a market for produce from the interior, has long ceased to be so, and Shanghai now is the shipping port for the valuable tea industry which centres at Tunki, about 16 miles south of Hweichow.

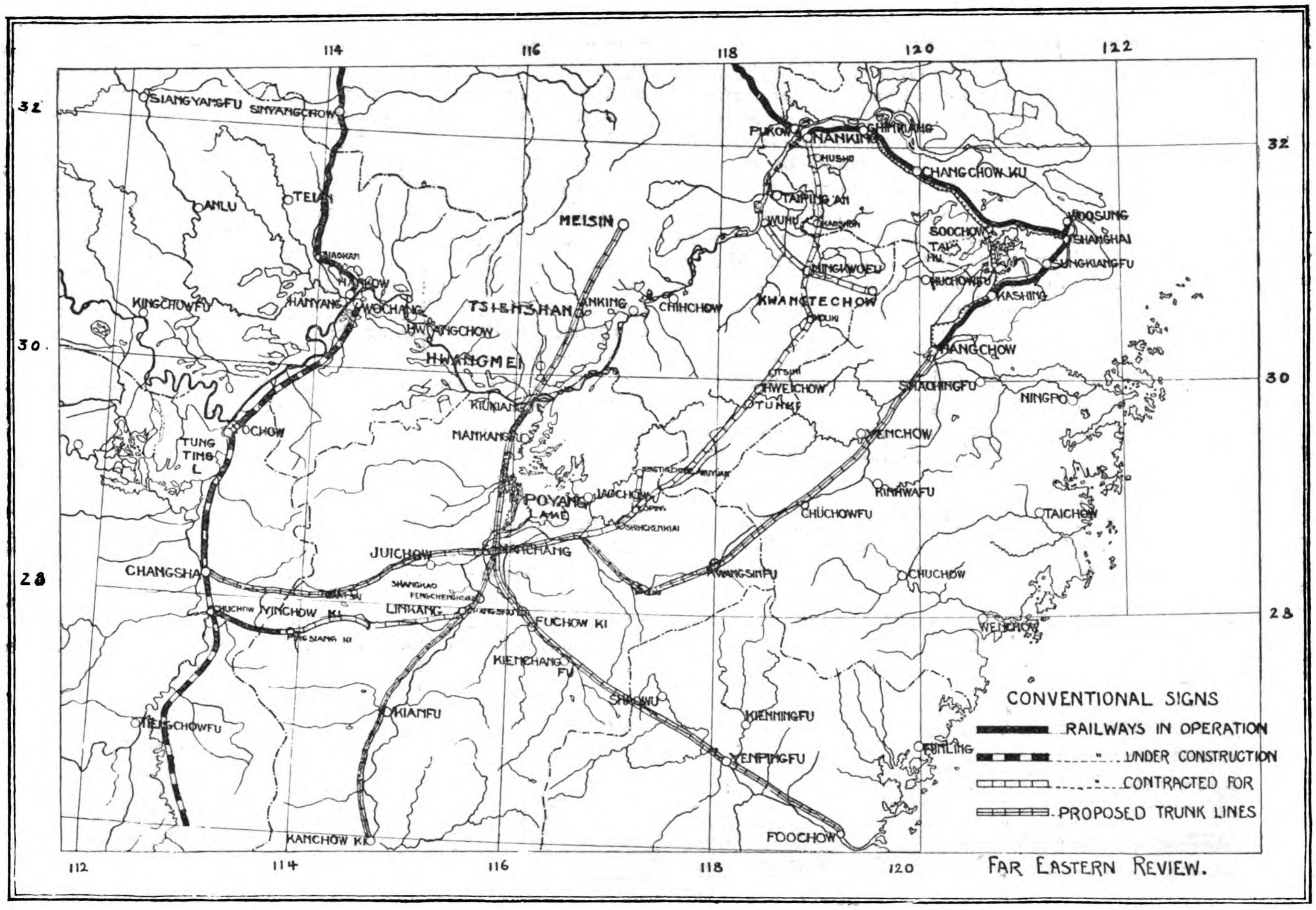
Between the summit and Wuyuan the line must be mostly cut out from the side of the hill; there would be many short tunnels or deep rock cuttings, where the bends of the river are too sharp for the minimum curve permissible on the railway. There must also be a large amount of stone retaining wall where the hills are too steep to cut out the full formation width of the railway, and protective works where it is liable to damage from the floods which rise with incredible rapidity in these narrow valleys.

From Wuyuan to Loping the line is fairly easy, and there are some broad side valleys where large quantities of rice are raised for supplying the tea growing districts which are too hilly for its cultivation.

From Loping the engineers went north to Kingtehchen and tried several passes through the watershed which runs north west from Litakun where it was first crossed.

The further north one goes the higher the mountains and the rougher the country generally and the easiest pass found, that near Tangkengkeou, requires the same gradient of 1 in 50, and a tunnel of almost identically the same length as that on the Loping route.

After careful consideration Mr. Foord came to the conclusion that the valley of the Loping River should be selected both because it is straighter and easier; also because the towns on this



The projected line from Nanking to Pingsiang is shown by the sign "contracted for." The trunk lines are shown by a similar sign with a third line in the centre. The trunk line shown passing south to Changshu Kianfu and Kanchow-ki will continue to Canton. The trunk line from Nanchang to Meisin would be continued north to join with the line from Peking.

route are much larger and more numerous, and far more ground is devoted to the cultivation of tea, the carriage of which must form the principal source of revenue of this part of the railway.

Another point of some importance is that the floods on the Kingteh River rise to a much greater height, which would, of course, add materially to the cost of the railway.

Kingtehchen is the chief place of manufacture of porcelain in China. Its wares find a market all over the country, and it should certainly be connected with Loping by a branch line, about 28 miles in length, through a very easy country. Loping, however, is in most ways the more important town of the two, being the distributing centre for a very large district, while Kingteh has very little business besides its one industry. This industry, however, is a considerable one, the yearly production being said to be worth $5,000,000, and this should bring in a steady revenue to the railway.

Beyond Loping the route to Nanchang would be the same whichever way through the hills is finally selected for the railway up to this place, and the choice lies between a southerly line through rolling country and one near the Poyang Lake which, though more direct, is over ground which has a depth of flood water on it of about 20 feet. This also requires some very costly bridge work, and for these reasons cannot be recommended.

The crossing of the river at Loping is the first big bridge on the line and here fifteen 100-feet spans would be required, but the foundations are probably good, rock being found on the surface in many places in the river.

About 50 miles further on the big river Kinkiang is crossed near Tachitu. This will require at least 2,000 feet of waterway and a high bank leading up to it, as the valley is subject to very heavy floods.

This river-crossing is one of the most important points on the whole line as it is up this valley that the great trade route to Chekiang runs, and it is here that the railway may hope to pick up a good deal of traffic which at present goes on down the river to Poyang.

For the next 30 miles the line passes through rolling country, and then crosses a stretch of 20 miles of ground from 10 to 20 feet below flood level. This country is all bunded and very productive, but the higher bank which must be built to keep the line above the water in case of the bursting of the dyke, will be costly.

The last 14 miles into Nanchang is over a flat, elevated plain, very thickly populated and with an immense traffic along the road leading to the city.

At present Nanchang does practically no business with the country lying to the east, as it is easier to take things by water to Jaochow and thence to Kiukiang, but as navigation is already difficult and the Poyang Lake is rapidly silting up, there is no doubt that the railway will be able to get most of the business as soon as there is a through rate to Kiukiang.

It is not possible for this railway to pass close to Jaochow, but as this is a large and important town the question of a branch line might be considered later.

The principal production of the country between Loping and Nanchang is rice, but at the former town the coal measures are again encountered and a fair quality of bituminous coal is mined, though for lack of transport only a very small quantity can be at present marketed.

Nanchang is a very large and busy city, and is destined by its situation to be one of the greatest railway centres in China, but as it is distant about ninety miles from Kiukiang, the nearest deep water port, it is evident that the railway between these two places practically controls the traffic of all the other railways which converge on Nanchang.

The position of the station at Nanchang is rather a problem as it must be placed as near as possible to the town and also in a

place where convenient junction can be made with the other lines which will sooner or later radiate from this city.

The ground on the west side of the river would be in some respects the most suitable, but it is low and has the disadvantage of being the other side of the river from the city. On the whole the side near the East Gate would be the best. This is high and fairly clear of buildings and sufficient land could be obtained for the large workshops which would be required here.

This means that the trains from Nanking would come into the station from the South East and back out again when proceeding to the South or West but would go straight on towards the Kiukiang Railway. The trains must in any case be reversed for one direction and this seems on the whole the best arrangement.

It will probably be necessary to build a short branch line to the river, south of the city, and to put in sidings for construction purposes and later on for goods traffic.

From Nanchang to Pingsiang there are two routes; one through Changshu and the other through Juichowfu. There is probably not much to choose between them as far as cost is concerned, and the length of both would be very nearly the same, but the former is recommended because Changshu is a very important business town and because a direct line from Nanchang to Changsha would traverse most of the second route.

Also, the first sixty miles of the first route, as far as Changshu, will form part of the great trunk line to Canton, and the first thirty miles of a similar line to Fukien.

latter would follow is equally productive with just as large and important towns and it is easier from an engineering point of view. The two lines are far enough apart not to interfere with each other in the least, and both would bring traffic to the eastward continuation of the railway after their junction with it.

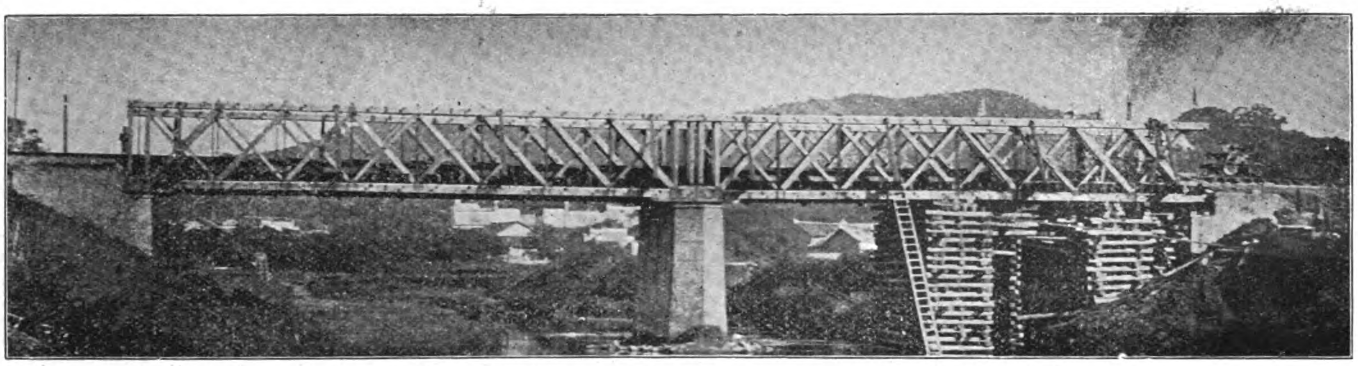
Coal is found nearly all the way from Nanchang to Pingsiang, and there is an almost continuous outcrop on the north side of the road for the last eighty miles of the way.

The Nganyuen mine is the only one which has been properly opened up and equipped with modern machinery and it is expected that the output of this will come up to 3,000 tons a day by the end of this year. All or nearly all of this amount is consumed by the Hanyang Steel Company, which is also the owner of the mine.

On the east side of the hill at Shanpu there are porcelain factories, and iron and other mines exist no great distance away. There is no doubt that Pingsiang is capable of development into a great industrial centre.

About one third of this railway runs through a mountainous district where Mr. Foord does not think a gradient of 1 in 50 can be avoided, so that the cost of working must also be high and it is evident that the freight charges cannot be sufficiently lowered to attract any long distance through traffic.

The country through which the line passes is rich and worth developing for its own sake but for the purpose of a great east and west trunk line another route must be selected. This is fortunately to be found a little to the south of the



PINGSIANG-CHUCHOW RAILWAY.—Wooden truss bridge near Pingsiang City.

present line and runs up the valley of the Kin river and down that of the Tsientang connecting with the Chekiang Railway at Hangchow.

This route presents no engineering difficulties, the watershed being low and easily crossed, while there is at the present time a very large traffic carried on by water, although the rivers are only really navigable in the summer, and there are said to be 900 mules engaged in the business of transporting the goods over the short distance which separates one river from the other.

The first thirty miles from Nanchang are on high and good ground, but the next thirty are in the valley of the Kan River and an average bank of about fifteen feet high would be necessary.

A long bridge is required for the crossing of this river near Changshu, about 3,000 feet for the main river and perhaps another 1,000 feet in small spans to carry the flood water, but it may be possible to find a place not too much out of the line where the banks are higher and a shorter bridge would suffice.

As soon, however, as the line turns westward up the Linkiang valley the land is higher and in very few places is the ground flooded at all.

From here up to the range of hills which separates the streams running east from those running west, the line is easy and the country mostly productive and well populated, the town of Yuanchowfu being large and comparable with Ningkwofu, and there is a very heavy traffic on the road between it and Pingsiang.

The hills mentioned form a considerable obstacle to the railway, but by employing a gradient of 1 in 50 a tunnel could probably be avoided altogether, and there is a possibility that, by joining the existing railway for a few miles further down, a quite easy route through the hills may be found.

It is a question of policy rather than of engineering to decide whether to spend the money which would be required to make this railway a first class line, or to construct it in a manner suitable for local traffic and to build the trunk line direct from Nanchang to Changsha. The route which this

Referring to the line from Nanchang to Pingsiang, Mr. Foord says that the railway from the mines to Chuchow was built solely for the transport of coal. It has been very badly located and has been built in such a manner that it would be next to impossible to convert it into a line suitable for through traffic. It has already nearly as much traffic as it can carry on a single line and the best policy would be not to spend much money on reconstructing it, but merely to put it into a condition of safety and build another line direct from Nanchang to Changsha for through traffic. Both lines would pay for themselves by their local traffic, but for through traffic the line via Pingsiang would be more than half as long as the direct line.

Changsha is a very important place and with the long line to the west which has lately been put in hand, it is certainly worth a direct connection with Nanchang.

Mr. Foord emphasises that he does not wish to imply that the line to Pingsiang is not well worth building, as nearly one third of it forms part of the most important main line to Canton. This latter, which would open up the immense coal deposits and

other riches of Kanchow, is far the easiest route between Canton and the north, beyond all comparison better than the Canton-Hankow line, and with an extension north of the Yangtse, joining either the Tientsin-Pukow Railway or the Peking-Hankow Railway, would form the quickest and easiest connection between Peking and Canton.

As the mountainous country traversed by the projected railway is cut up into very numerous valleys, many of which are not shown on the maps and have no roads up to them, it is quite possible that a prolonged examination of the country may result in the discovery of a much better way through the main divides. This is so important that no amount of time spent on survey work would be wasted. What is really wanted is an accurate map taking in a fairly large extent of the country, and, to make this, 5 or 6 small parties of engineers, mainly Chinese, should be sent out to do traverse work before even a preliminary attempt at location is made. Much of the survey would be very tedious and difficult as the hillsides are densely clothed with vegetation through which lines must be cut before any work with an instrument can be done, and in this respect this district differs from most other parts of China in which railways have hitherto been built.

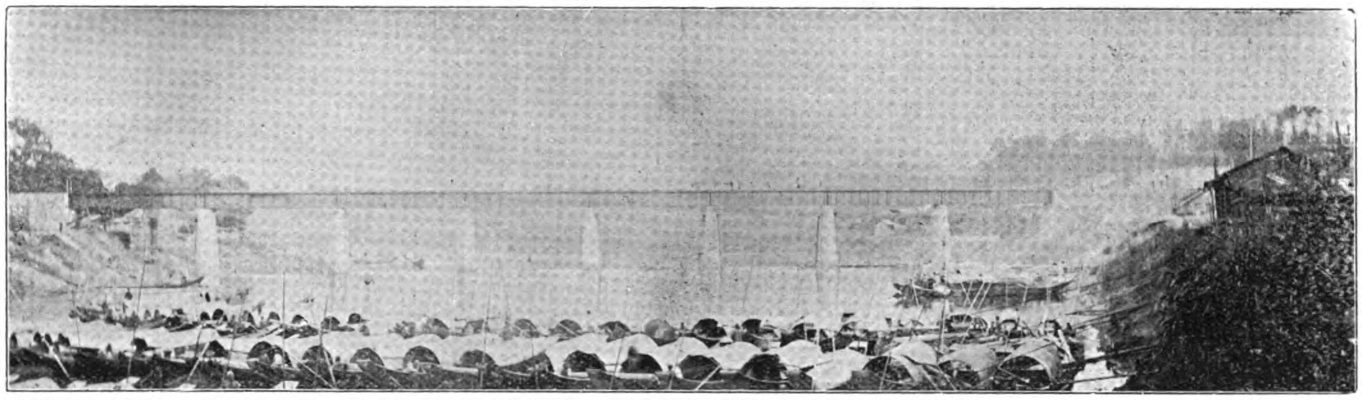
During construction the difficulties of transport will be seriously felt, especially for getting up heavy machinery and explosives to the sites of tunnels, but, the foundations being good in the mountainous parts, bridges could mostly be built of masonary and material obtainable in the vicinity instead of field spans which could not be carried up country until the rails are laid.

Chu Chih-chien, Minister of Communications; Mr. Chow Tze-chi, Minister of Finance, and Mr. S. F. Mayers, representing the British and Chinese Corporation.

Under the Agreement the Chinese Government authorises the issue of a five per cent. gold loan for £8,000,000 to provide capital for the resumption by the Chinese Government of the Anhui Provincial Railway Company's work and property in the neighborhood of Wuhu; the construction of a Government line of railway from Nanking to Nanchang, and with connection to Wuhu and Kuangtechou, and from Nanchang to Pingsiang, to connect with the existing Government railway from Pingsiang, to Chuchow; and for the incorporation of the Chuchow-Pingsiang railway as an integral part of the railway to be constructed under the agreement from Nanking to Pingsiang. The period of construction is estimated at four years from the actual beginning of operations, construction not to be delayed more than six months from the date of the signature of the agreement.

It is provided that a branch line on a point on the main line at or near Hweichowfu, passing through Yuchien to Hangchow and a connecting line from the Nanchang-Pingsiang section to a point on the Hupeh section of the Hukuang railway, if found by the Chinese Government to be profitable or necessary later on, shall be built by the Chinese Government with funds at their disposal from Chinese sources and if foreign capital is required preference will be given to the agents, the length of such lines to be determined by the Chinese Government.

The term of the loan is to be forty-five years, amortisation to begin upon the expiry of the fifteenth year, the loan being guaranteed by the Central Government and being secured by



PINGSIANG-CHUCHOW RAILWAY.—Eight 60 ft. span plate girder bridge over the Lukiang near Liling City.

One thing struck Mr. Foord forcibly while exploring the hill country from valleys across the intervening ridges and that is that no railway can hope to develop more than a very narrow strip of country until practicable roads are constructed to connect the towns on each side of the line with the railway, and no effort should be spared to induce the inhabitants to take this much needed reform in hand.

The loan agreement signed in connection with this railway between the Chinese Government and the British and Chinese Corporation is for £8,000,000 at five per cent interest, the security being the line itself. Provision is made that the Corporation shall have the preference of supplying capital for any railway that might be built between Hweichowfu and Hangchow, or from any point on the Nanchang-Pingsiang railway to the Hukuang railway. The agreement provides for the appointment of a British Engineer-in-chief, and a British accountant. The British and Chinese Corporation receives the usual five per cent. purchasing commission.

Mr. T. C. Sun has been appointed Chinese Managing-Director, and Mr. Frank Groves, late Engineer-in-Chief of the Canton section of the Canton-Kowloon railway, has been made Engineer-in-Chief of the new line.

Conditions of the Agreement

The Agreement in connection with this railway, consists of twenty-four articles and was signed on March 31, 1914 by Mr.

mortgage of the railway and the revenues of all descriptions derivable therefrom. The loan will be issued to the public in two or more series of bonds, the first issue to be made to an amount not exceeding £4,000,000, sterling, as soon as possible after the signature of the Agreement. The price of the bonds to the Chinese Government is to be the actual price of issue to the public in London less flotation charges of four points retainable by the Corporation. The second and subsequent series are be issued in time to permit of uninterrupted continuance of the work of construction, the proceeds of the loan to be paid to the credit of a Nanking-Hunan Railway Account with the Hongkong and Shanghai Banking Corporation in London, interest at the rate of three per cent. to be granted on the credit balance kept in London, and the usual rate on sums transferred to China.

The accounts of the railway will be kept in Chinese and English in accordance with accepted modern methods under the direction of a duly qualified British Accountant.

The construction and control of the railway are to be vested entirely in the Chinese Government, the Engineer-in-Chief to be a qualified British Engineer to be appointed by the Ministry of Communications. He will take orders from the Ministry of Communications or the Managing-Director of the line, and his services are to be retained during the currency of the loan.

The Corporation will act as Agents for the Railway Administration during construction for the purchase of all materials, plant, and goods required to be imported from abroad. For all important purchases of such materials tenders are to be

called for by the Director-General of Railways of the Ministry of Communications, or the Managing-Director or his duly appointed representative, in the case of all tenders indents and orders for the importation of goods and material from abroad; the Agents are to purchase the material required on the terms most advantageous to the railway, and charge the original net cost of the same plus a commission of five per cent. In return for the payment of this commission the Agents are prepared to superintend the purchase of all foreign materials required for the construction and equipment of the railway, which shall be purchased in the open market at the lowest rate obtainable, it being understood that all such materials are to be of good and satisfactory quality and that the Railway Administration shall have the right to reject on arrival in China materials which do not come up to specifications. At equal rates and qualities goods of British manufacture shall be given preference over other goods of foreign origin. With a view to the encouragement of Chinese industries preference will be given at equal price and qualities, over British or other foreign goods, to Chinese materials and goods manufactured in China. No commission will be paid to the Agents upon purchases of such materials and goods. After the completion of construction of the railway the agents will be given the preference of such agency business during the currency of the loan for the supply of foreign materials as the railway administration may require on terms to be mutually agreed upon.

THE EASTERN PIONEER COMPANY.

In the last issue of the FAR EASTERN REVIEW we published the history of what is known as the Pritchard Morgan Concession for the working of the mineral deposits of Szechuan Province. We now glean from the London *Financial News* something of the financial state of the Eastern Pioneer Company which was formed in 1899 to take up and work the Concession secured by Mr. Pritchard Morgan.

The Eastern Pioneer Co., Ltd., was registered in October, 1899, with a nominal capital of £300,000 in £1 shares, to adopt an agreement with Wm. Pritchard Morgan, M.P., and to carry on business as land, estate, and mine owners, explorers, prospectors, miners, metallurgists, quarrymen, timber merchants, and mill owners. In January, 1902, a circular (signed "Geo. T. Broadbridge, secretary") was sent to shareholders inviting subscriptions for 25,000 shares, forming a portion of 49,993 unissued shares. The circular said: "At the formation of the company provision was made for a working capital of £100,000, and 50,000 of the fully-paid shares alloted to the original concessionaires were set apart as a bonus for the provision of that capital. Out of the 49,993 shares in reserve the directors have resolved to issue 25,000, and, with the co-operation of the vendor, 25,000 fully-paid concessionaire shares will be available as a bonus to the subscribers of this £25,000, in the proportion of one bonus share for each share subscribed for. The provision of this capital and the very large interest which the company holds in the British and Korean Corporation, Ltd., which acquired the Korean Concession, should place the company in a thoroughly sound and strong position."

In February, 1907, a prospectus was filed, offering 300 first mortgage debentures of £100 each, repayable on December 31st, 1908, carrying interest at 8 p.c. p.a. The debentures were to be secured by (1) a first mortgage over the Morgan Concession, province of Szechuan, (2) deposit with trustees of 200,000 ordinary shares of the British and Korean Corporation, Ltd., (3) a floating charge on the undertaking and general assets. The prospectus stated that nearly one-half interest in the British and Korean Corporation was held by Messrs. Jardine, Matheson & Co. and their friends, and that the mines were under their management.

There has been some laxity in the filing of the company's returns, many of these being filed from three to eleven months after the statutory date, and the enactment that a company must hold a general meeting once at least in every year appears to have been honoured more in the breach than in the observance. The last annual summary was made up to December, 31st, 1913 (no meeting having been held during the year), and filed on March 14th, 1914. It showed 250,007 shares issued, of which 50,007 had been fully paid up in cash and 200,000 were credited as fully paid. There were no debentures or other charges requiring registration. There is nothing on the file to show that any of the debentures offered in 1907 were ever issued, and the balance-sheet to June 30th, 1908 (prior to which no company was required to file a balance-sheet), did not mention any debentures among the liabilities. The directors at the end of 1913 were: Colonel Weatherall, C.B., W. Pritchard Morgan, J. W. Mayer, A. Diehl, and John Crisp. The principal shareholders at the same date were:—

Mr. T. C. Sun, Managing Director of the Nanking-Hunan line.

Mr. S. B. Shen, who will be in charge of the Chinese Survey parties of the Nanking-Hunan line under Mr. Frank Grove.

	Shares.
Executors of E. M. Bainbridge, 146, Lauderdale Mansions, W.	1,250
Sir Charles Friswell, 1, Albany-street, N. W.	1,000
Sir William Ingram, Bart	1,271
Timothy M. Healy, K.C., M.P	1,500
William Keswick and John M. Macdonald, 3, Lombard-street, E.C.	80,000
Lord Merthyr, Aberdare	5,000
Executors of Sir John Blundell Maple...	4,500
C. Baker, Brussels	1,500
Banque d'Outremer, Brussels...	1,000
J. H. Bush, Shanghai	1,000
Compagnie Internationale d'Orient, Brussels	1,000
Crédit Générale Liégeois, Brussels	1,500
Reginald Carr, Stock Exchange, E.C.	1,900
J. W. Circuitt and C. H. Passingham, 72, Lombard-street, E.C.	2,000
Chevalier Raphael De Bauer Brussels...	1,920
G. and M. H. De Lavelege, Brussels	1,500
F. E. Dixon, 81, Gracechurch-street E.C.	2,400
E. Empain, Brussels	1,500
G. A. Edell, 4, King-street, E.C.	1,000
J. F. Edell, 4, King-street, E.C.	2,590
F. Gordon, 1, Devonshire-square, E C.	1,000
E. A., K. R., and W. R. Hay, 20, Abchurch-lane, E.C.	1,000
L. Lambert, Brussels...	1,500
Samuel Lazarus, 3, Drapers'-gardens, E.C.	3,500
J. W. Mayer, Denecourt, Percy-road, Boscombe	1 330
William P. Morgan, 1, Queen Victoria-street, E.C.	2,191
J. V. B. Murdoch, 140, Princes-street, Edinburgh...	3,700
Miss G. P. Morgan, Cotswold, Staines	4,667
A. E. Messer, 14, Old Jewry Chambers, E.C.	3,050
N. W. Mellor, 7, Great Winchester-street, E.C.	4,500
Executors of F. Pavy, Salisbury House, E.C.	2,834
Countess Augusta A Piper, Skane, Sweden	1,000
F. Phillipson, Brussels	1,000
W. A, Paynter, Silvermead, Knowlegreen, Staines	5,300
G. E. Philcox, Stock Exchange, E.C. ...	1,000
C. H. Regnart, 144, Tottenham-court-road. W.C...	1,350
Railway Share and Trust Agency Co....	20,000
G. A. C. Shenley, Warsash, Southampton	1,000
W. B. Smith, c/o J. W. Russell, M.S., 72, Newhall-street, B'ham	1,000
H. T. Tatham, 3, Finch-lane, E.C...	1,000
S. Wilner, Brussels	5,800
Colonel H. B. Weatherall, Manor House, Staines...	1,000
B. E. Yorke, 19, Throgmorton-street, E.C.	1,000

As a copy of the balance-sheet to June, 1908, has been filed with every annual return from 1908 to 1913, it would appear that no later accounts have been prepared. At this date there was £4,623 due to creditors, and cash at bank amounted to £20. The auditors remarked (*inter alia*): "The price originally paid for the assets acquired by the company and the expenditure since made by the company are included in full in the balance-sheet. The present value to the company of the expenditure in connection with Korea is of little or no value, and the value of the assets in China is very uncertain. The British and Korean Corporation, Ltd., is in liquidation, and we are informed that the preference shares, which are included in the balance-sheet at cost, are of no value."

THE FAR EASTERN REVIEW

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CHINA'S RAILWAY ACCOUNTING DEPARTMENT

The appointment of Dr. C. C. Wang as head of the newly created Accountant Department of the Ministry of Communications in Peking is one of the wisest that the new Minister has as yet made. To Dr. Wang must go the initial credit for the excellent work that has so far been done by the Commission for the Unification of Railway Accounts and Statistics. He, in fact, was the initiator of the movement. His recognition of the tremendous importance of an early unification of accounts, his unflagging energy, and his enthusiasm, combined with his ability and knowledge of his subject enabled him to overcome early opposition and convince the then Minister and Director-General of Railways of the urgent need for such a work; and it is highly creditable to those two gentlemen that they fell in with Dr. Wang's ideas and created the Commission. In another column we record the first fruits of that organisation, and mention the lines of progress that it has so far made. It is now nearing its close, and by next month it should have thrashed out and decided upon the many questions which it was called upon to settle. The onus of now making the results of the labors of the Commission profitable to the country is upon the shoulders of the Government, and that the Government has now named Dr. Wang as the head of the department which will be the executive to put the proposals of the Commission into effect, seems to indicate that the high authorities are in earnest in an endeavor to give to the railways the regulated accounting system that they have so long needed. What is now required is, of course, the granting of ample powers and complete authority to Dr. Wang to apply the rules and have proper use made of the forms which the Commission has devised on all the railways in the country. Unless this is done the labors of the Commission will have been in vain. China has, however, so long labored under the stigma of make-believe at reform, has bleached the road of her history with the skeletons of so many fruitless Commissions, has crammed so many cobwebbed pigeon holes with valuable reports, that it is sincerely to be hoped that henceforth the fullest and most comprehensive use may be made of all such carefully prepared reforms as those emanating from the deliberations of the Commission for the Unification of Railway Accounts and Statistics.

THE NEW PHILIPPINES BILL

With the publication of the text of the new Philippines Bill—more popularly known as the Jones Bill—the situation in the Islands may tend to become clarified. The Bill, contrary to anticipation, does not fix any date for the withdrawal of the United States from the Philippines. The withdrawal will take place "as soon as a stable government can be maintained by the Filipinos." As far as this is concerned it is merely a reiteration of a determination announced practically as soon as the sovereignty of the islands passed to the United States.

While the date upon which the Filipinos will attain independence is left unsettled, immensely larger powers are given to the native inhabitants of the Islands. An elective Filipino Assembly and Senate has practically full powers of legislation. The Governor-General is to have the power of veto, but, if vetoed bills are repassed by the legislature with a two-thirds majority, they have to be sent to the President of the United States for approval or disapproval. The franchise is greatly widened by the Bill. As far as can be gathered from the Filipino press the Bill does not meet with entire favor. Stress is laid upon the fact that the day of independence is apparently as far off as ever. On the other hand Governor-General Harrison regards the Bill as a noteworthy step forward. He has given the following expression to his views:—

"The new Jones bill is in direct line with President Wilson's policy as announced upon my arrival in Manila last October. He instructed me then to say 'Every step we take will be taken with a view to the ultimate independence of the islands and as a preparation for that independence.' He took one step then in the appointment of a majority of Filipinos on the commission. The great success of that step justifies another step now.

"No better preparation for independence could be made than that provided by the new Jones bill. Substantially autonomous government is given. Certain checks and balances are prescribed which are regarded as essential by the United States. Meanwhile, the Filipinos are given practical management of their internal affairs.

"Most important is the declaration that the United States purposes to recognize the independence of the Philippines as soon as a stable government can be established therein. All those who believe in the capacity of the Filipinos for independence should be confident of the result. Great progress has been made this year—still more may be made under the new legislation. If success crowns the new undertaking, opponents of Philippine self-government must rapidly diminish, and their arguments will have been refuted.

"The resident commissioners in Washington have worked for a fixed date for independence. That proved impossible at the present time. President Wilson has furnished most excellent reasons for preferring the new Jones bill. The Filipino people should support this legislation. In that way the patriotic Filipino can at this juncture best serve his native land; in that way independence may be achieved with self-respect and the good will of all.

"When the bill becomes a law, I feel confident that all Americans here will unite in supporting the Philippine policy of our country; cheerfully and unselfishly they will aid in the future working of this new form of government."

THE SHASI-SHINGYIFU RAILWAY.

On Saturday, July 25, a final agreement was signed between the Ministry of Posts and Communications and Messrs. Pauling and Company, Limited, of London for the construction of a railway starting from a point on the Yangtsze River opposite the city and port of Shasi, in the Province of Hupeh, through Lichow, Changteh, Shenchow, Yuanchow, Chenyuan, Kweiyang, Anshunfu to Shingyifu, in the south-western corner of the Province of Kweichow, with a Branch from Changteh to the city of Changsha, the capital of the Province of Hunan. The loan is for £10,000,000 for forty years at five per cent. interest. The railway is to be built by contract, a firm of British consulting engineers acting with the Chinese managing director in drawing plans and supervising the work. No section is to be started without specifications and costs approved by the Chinese and the price of the work will consequently be kept down as low as is consistent with efficiency. A firm of British accountants will be engaged to deal with the accounts of the loan, which is secured on the line and is also guaranteed by the Government.

We have already made descriptive reference to this proposal in the FAR EASTERN REVIEW of February 1913. The line will follow the old established trade route as far as possible, linking together the chain of cities, towns and villages in the fertile valley of the Yuan River and those located along the highway stretching across the breadth of Kweichow, following the identical route suggested by Consul Bourne in his report on the trade of Central and Southern China in 1898, as being the best and most likely to pay.

Since time immemorial communication between central China and the southwestern provinces has followed the only feasible and practical natural road. Trade and travel have been confined to what is known as the great Southwestern Trade Route, one of the important main arteries of the old Empire. From Hankow across the Tungting Lake and up the turbulent Yuan River into western Hunan, over rapids and shoals, the small junks and sampans are still sailed or laboriously hauled or poled as far as the head of navigation at Chenyuan in the province of Kweichow. From this point all goods are transferred to the backs of coolies or mules and so carried the three hundred or more miles across Kweichow, ever upwards to the higher levels of the Yunnan plateau, where the loads are again transferred to carts. The entire province of Kweichow, the eastern part of Yunnan and parts of Szechuan have been dependent for centuries on these slow, uncertain and expensive methods of transportation, with the natural consequence that their development has been retarded, trade reduced to a minimum, and the surplus population of the other provinces have overflowed into more accessible regions. Nowhere in China is the need for a railway greater than in Kweichow, and nowhere does it promise more profitable returns.

By virtue of its commanding position Hankow will be the great future railway centre of China, from where the main trunk lines will radiate in all directions. Insurmountable natural obstacles, however, make it impossible for the south-western trunk line to start directly from Hankow. The presence of the Tungting Lake, an immense natural reservoir for the flood waters of the Yangtsze River, and the maze of rivers, creeks, canals, and smaller bodies of water in the immediate country to the southwest of Hankow, compel a deviation from the straight line. The Chinese Government has, therefore, wisely selected the nearest commercial centres to the northwest and southeast of the lake district as the termini of the proposed southwestern trunk line. At Shasi, the nominal terminus of the line, connection will be made in future with the German section of the Hukuang Railway (now under construction) thus providing a rail outlet to Hankow on the east, and with the cities of the Szechuan Railway to the west. At Changsha, the eastern terminus of the line, connection will be made with the great north and south trunk line now under construction (Canton-Hankow) thus providing another outlet to Hankow on the north and with Canton to the south. At this point connection will also be made with the future Changsha, Nanchang, Nanking railway this providing a direct through outlet to the sea at Shanghai. The Agreement for the construction of this last line was recently entered into between the Chinese Government and the British and Chinese Corporation, and is dealt with elsewhere in thus issue. It will be seen by a glance at a map that the connection at Changsha with the above line will create a continuous trunk railway from the sea at Shanghai through Nanking, Nanchang, Changsha, Changteh, Yuanchow and Kweiyang to Shingyifu. The combined systems thus connected, although owned and operated by the Chinese Government, are being financed and constructed by exclusive British interests. The Changsha section of the Shasi-Shingyifu railway is therefore of the greatest importance as providing the necessary link for through goods and passenger traffic from the sea coast to the extreme southwest of China, as well as for connecting with the other main systems. Although Shasi is the nominal terminus of the line, it is clear that the strategical traffic point of the new line will be located where connections are made with the other great trunk lines at Changsha, the capital of the province of Hunan.

The two lines from Shasi and Changsha will join to form the main southwestern trunk line at the port of Changteh, the largest commercial and trading centre in the Province of Hunan, located near the south-west corner of the Tungting Lake on the banks of the Yuan River. From this great distributing market, the line will proceed up the valley of the Yuan River, linking together the chain of cities, towns and villages which are closely scattered along the valley. Through Shenchow and Yuanchow, to the head of navigation at Chenyuan, and thence through the cities, and towns on the Kweichow highroad to the provincial capital at Kweiyang, and again westwards through Anshunfu to the terminal on the southwestern border of the province at Shingyifu. Here the line will connect with the Yamchow, Yunnanfu-Chungking Railway, the Agreement for the construction of which was entered into in January between the Chinese Government and the Banque Industrielle de Chine. This connection will provide for through rail communication with the city of Yunnanfu, the capital of Yunnan Province, from where a railway is already in operation into Indo-China. A glance at a map will show that apart from the purely local importance of the Shasi-Shingyifu line as a factor in the development of the districts through which it will pass, it will constitute a link in the chain of railways providing through communication from Europe to Indo-China and the British possessions in the Malay Peninsula. Rail communication between Europe and Hankow has been established now for several years, and as the Canton-Hankow, the Shasi-Shingyifu and the Yamchow-Yunnan lines are completed, through service will be possible from Paris to Haiphong. As the Governments of Indo-China and Siam are constructing lines which will ultimately connect, the Chinese lines will supply the link for the future rail communication between Europe and Singapore.

RECEIPTS AND EXPENDITURES OF CHINESE RAILWAYS

The following table gives the returns of various Chinese Railways from 1909 to 1912 inclusive. The figures before 1909 are omitted owing to the difficulty of distinguishing the traffic from the capital amounts. The Kaifeng-Honan Railway was not open to traffic in 1909, and in 1912 it was absorbed in connection with the Lung-Tsing-U-Hai Railway, so statements for those two years are omitted. The Changsui extension of the Peking-Kalgan railway, the Canton-Kowloon and the Tientsin-Pukow Railways were not completed before 1912. The figures here given are traffic receipts which include income from the passenger and goods services, rentals, deposits, interests and other miscellaneous items. Expenditures include traffic expenses, interest on loans, expenses for repairs and maintenance. There may be some slight discrepancies in the figures for 1912, the first year of the Republic of China, but we may not be able to determine the precise figures until the final statement for the whole of that year is issued.

	Year	Receipts	Expenditure	Surplus	Deficit
	1909	11,698,332	5,259,294	6,439,038	
	1910	11,116,070	4,635,779	6,480,291	
Peking-Moukden	1911	10,943,191	5,136,474	5,806,717	
	1912	13,870,213	6,952,093	6,918,120	
	Total	47,627,806	21,983,640	25,644,166	
	1909	11,114,614	6,849,557	4,265,057	
	1910	12,242,858	7,341,907	4,900,951	
Peking-Hankow	1911	11,398,460	8,563,249	2,835,211	
	1912	13,673,218	7,468,111	6,205,107	
	Total	48,429,150	30,222,824	18,206,326	
	1909	1,428,132	1,729,493		301,361
	1910	1,756,493	1,790,466		33,973
Chengting-Taiyuanfu	1911	1,661,975	1,684,230		22,255
	1912	2,509,521	1,962,972	546,549	
	Total	7,356,121	7,167,161	188,960	
	1909	356,517	672,918		316,401
	1910	477,593	768,237		290,644
Taokow-Chingkwachen	1911	466,544	755,753		289,209
	1912	576,043	851,161		275,118
	Total	1,896,697	3,048,069		1,171,372
	1909				
	1910	555,300	1,442,920		887,620
Kaifeng-Honanfu	1911	612,500	1,473,900		861,400
	1912				
	Total	1,167,800	2,916,820		1,749,020
	1909	1,796,083	2,877,152		1,081,069
	1910	2,018,349	2,955,534		937,185
Shanghai-Nanking	1911	2,251,072	3,038,242		787,170
	1912	2,675,943	4,160,660		1,484,717
	Total	8,741,447	13,031,588		4,290,141
	1909	604,217	262,821	341,396	
	1910	686,289	295,156	391,133	
Chuchow-Pingsiang	1911	444,760	271,520	173,240	
	1912	240,020	229,243	10,775	
	Total	1,975,286	1,058,742	916,544	
	1909	476,442	802,598		326,156
	1910	1,329,632	1,254,237	75,395	
Peking-Kalgan	1911	1,456,241	979,447	506,794	
	1912	2,209,031	919,361	1,289,670	
	Total	5,501,346	3,955,643	1,545,703	
Changsui Extension	1912	382,679	209,316	173,363	
Canton-Kowloon	1912	608,107	1,407,562		799,455
Tientsin-Pukow	1912	5,689,431	6,065,025		375,594

UNIFICATION OF CHINA'S RAILWAY ACCOUNTS

The first fruits of the work of the Commission on the Unification of Railway Accounts and Statistics have been borne in the shape of the promulgation of the Classification of Capital Expenditures, for both Construction and Financial accounts, together with general rules and forms, etc., which have been drawn up in Chinese, English and French.

This must be highly gratifying to those who have shouldered the heat and burden of the work, for when the Commission began its unification labors last year there were many difficulties which appeared insurmountable, chiefly among them being the lack of precedents for such an undertaking and opposition from many directions. This being the first time in China's railway history that unification of a fundamental problem on a large scale has been taken up—one, too, which involved the modification of many existing practices on all the railways—it was but natural that much apprehension should prevail at the commencement. It was, in fact, only due to the firm stand taken by Minister Chu Chi-chien, and the continued support given by Minister Chou Tze-chi, and Mr. Yih Kung-cho, combined with the co-operation of all men taking part, that the Commission was able to carry out its programme so far.

The first question confronting the Commission was how to find proper men to do the work. In so far as the contemplated unification would involve the change of existing practices on the different railways and would also have to be suitable to local conditions, it was at once thought desirable to invite the Chief Accountants of the various railways to take an active part in the proposed reform. On the other hand, since the requirements of the Finance and Auditing Departments had to be kept constantly in view, it was also of necessity to have the services of men who were familiar with the requirements of the Central Government as well as with the work. The Commission, therefore, recommended the appointment of a number of the members of the Ministry interested in accounting and the Chief Accountants of the different railways as members of the Commission. In order to enable these men of the Ministry to get a clear insight into local conditions so as to understand and appreciate the local accounting problems of the railways, the Commission first sent two of the members to each one of the railways to make a thorough investigation of their organization and working. In so far as Japan was a neighbour with a similar written language, and had perhaps gone through similar difficulties in adopting and unifying her railway accounting system, her experience was, therefore, deemed of value, and two members, versed in Japanese, were deputed to make a study of the organization and working of the South Manchurian Railway. To take advantage of the experience of other countries, Dr. Henry C. Adams, the expert in charge of Railway Statistics and Accounts of the United States Government, was engaged as Adviser, so as to obtain the benefit of both scientific and independent guidance.

These preparatory steps having been taken, the Commission commenced its labors and has held three sessions, more than seventy meetings having been held. Gradually difficulties which loomed large at the outset diminished, and the discussions in the meetings were marked with harmony and co-operation; the work progressing with great rapidity.

There being many new railways under construction in China all in need of more adequate classification, or rules to guide them in the allocation of their construction expenditures, the first question taken up by the Commission was the classification of capital expenditures, with the hope that the new roads might adopt uniform classifications before they went too far, thus saving the irksome and costly work of re-arranging their accounts later.

By taking local conditions into constant consideration, and by careful examination of practices abroad, the Commission therefore drafted the Classifications of Capital Expenditures. This is divided into two parts, the first one covering construction accounts and the second dealing with financial accounts. Special care was taken to make the classifications practicable and suitable to conditions in China; and to allocate the expenditures in such a simple and systematic manner as to enable the Government or the railway managements to see at a glance the cost of the different principal features of the property. Special effort was also made clearly to mark the lines of responsibility of the different chiefs of departments of the railway by allocating, as far as possible, the expenditures under the responsible officers. In so far as it is human nature to prefer making a good showing for oneself, by so allocating the expenses to the accounts of the responsible officers, the Commission hope to effect considerable economy.

The separation of salaries and allowances from other kinds of expenses is an improvement and should prove of great value to the country. As much railway material has to be imported, attention has been paid to show the cost of such material as compared with that of local production.

The separation of land in service from real estate will help the Government to measure the efficiency of the different managements. Rent from surplus land does not require much railway ability to realize, and in the absence of proper separation some of the railways which have much of such land have been able to swell their traffic earnings by such rent, thus making an undeserved better showing over others. This, however, is only one of many similar precautions taken to guard against misleading results of operation.

The separate treatment of the expenditures of the central mechanical works, as distinct from those of the railway proper, will help to measure the results of such works. Practically speaking central mechanical works are on the plane of outside operations for which separate or suspense accounts should be kept as in the case of a factory, failing which the efficiency and economy of such works become hard to determine. The present classification will make possible such a separate treatment of central mechanical and other special works if the Government decides so to do.

This new classification besides bringing about uniformity, which in itself is a very important thing, will enable the Government to see at a glance the different classes of expenditure in a scientific manner, and will also enable the Government to know what and how each railway costs. China may appreciate the importance of so recording costs by noting the disadvantages which have resulted from the lack of such records in other countries. For instance, the United States failed to unify her railway accounts until a late date, and this delay is now costing her some $50,000,000 in an effort to find out the cost of her railways. China also had similar experience, although on a much smaller scale, in that in the absence of proper accounts she found considerable difficulty in fixing the prices of private railways, which she desired to purchase back from the merchants. In fact the principal cause of the failure of China's private railways and big business in general is the lack of proper accounting. By adopting and enforcing a uniform classification at this stage of her railway development, similar disadvantages may be avoided.

The Classification of Operating and Other Revenues is also finished. Depreciation rules and the Classification of Running, Traffic, Maintenance and General Administrative Expenses will also be ready in a few days. In the session which took place in July, the Net Revenue, and Profit and Loss Accounts, General Balance Sheet, etc., together with forms and rules governing administrative reports, statistical requirements, etc., were dealt with. From all prospects, it seems that unless some unforeseen development takes place the Commission may reasonably expect to finish its work by the end of August.

The Commission in the course of its effort to unify the accounts found many other difficulties. For instance the different languages used by the railways, which may appear a trifling matter, presented problems not found in other countries. On account of the loan agreements and established habits of the different railways, the Commission had to use three languages in their discussions, i.e., Chinese, English and French. As some of the members only knew one or two of the three languages, considerable difficulty and delay resulted.

Since these classifications are for the Government Railways, the Chinese language naturally should be made authoritative, but here, further trouble was encountered, for scientific terms in

Chinese are not standardized. The Commission sometimes found one railway term or article described by three or four different names on the different railways and they were compelled to adopt provisionally the English terms as standard pending the unification and standardization of the Chinese terms. This is only one of the many peculiar difficulties which do not obtain elsewhere.

On account of peculiar difficulties and in order to meet local requirements, a compromise had to be agreed to on many points, making the present code far from ideal. It is, however, the best that could be done under the circumstances, and if properly enforced, will be a great improvement over the past when each road was at liberty to group its expenditures in whatever manner it saw fit. Not only every head and every item in the new accounts have been thoroughly discussed and revised, but practically every word has been carefully considered. Moreover, this uniform system is not the work of any one man, but represents the crystalized opinion of the best qualified men now available in practically all China. But the value of a uniform system of accounts, or any other system lies more in the proper enforcement and application rather than the degree of perfection of the system itself. China has been criticised often on account of her failure to enforce the rules which she promulgates.

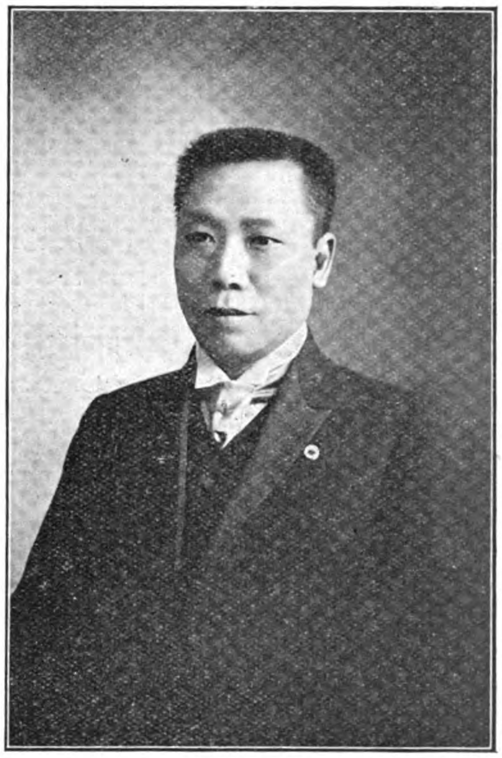
To the above effect the Chairman, Mr. Yih Kung-cho and the Vice-Chairman, Dr. Wang Ching-chun, the leading spirit in the movement, addressed the Minister of Communications, who eventually placed the whole matter before the President for promulgation. In so far as railway accounting is closely related to railway management and finance, and in so far as this is the first time that unification of an extensive and important kind has been applied to China's railways, thus starting the unification movement, it is hoped that effective measures will be taken for the proper enforcement of the proposed new system.

Sao-ke Alfred Sze,
Chinese Minister to the Court of St. James.

NEW CHINESE MINISTERS ABROAD

THE MINISTER TO LONDON

Mr. Sao Ke Alfred Sze, who has the distinction of having been appointed Chinese Minister to London at the age of 37 years, was born in Chekiang Province on April 10, 1877. He has had experience abroad which has gained for him a knowledge of Occidental life, customs, and learning which eminently fit him for the important position which he has been selected to fill. In addition, he has held responsible posts in his own country, and has an intimate knowledge of conditions in China and the multiplicity of questions which concern her politically. His first service abroad in the interests of China was in the capacity of Student Interpreter at the Chinese Legation at Washington, where he went in 1893. In 1899 he became secretary to the Chinese Commission to the First Hague Conference, and at its conclusion he was appointed attaché to the Chinese Legation at St. Petersburg, where he remained till July 1899. Proceeding to America to complete his education he graduated from Cornell University in 1901, the degree of A.B. being conferred upon him, and in 1902 he passed his examinations for A.M. Returning to China in the autumn of 1902 he was appointed Secretary Interpreter to the late Viceroy Tuan Fang, and later he served under the late Viceroy Chang Chih Tung in a similar capacity. In 1905 he was appointed First Secretary to the Commission formed to go abroad to study Constitutional Governments, and with this commission he travelled round the world and was received at the different European courts. In 1906 he became Managing Director of the Peking-Hankow Railway; being transferred in 1907 to be Associate Director of the Imperial Railways of North China. He became Customs Taotai of Harbin in 1908, and remained in that post 26 months. In 1910 he was appointed Commissioner of Foreign Affairs of Kirin, Manchuria, but before taking up this post was appointed Junior Deputy Vice-President of the Waiwupu (Board of Foreign Affairs). He was promoted to be senior Deputy Vice-President in 1911, and in April of the same year was made Imperial Commissioner to the International Plague Conference at Moukden. In October, 1911, he was appointed Chinese Minister to America, Mexico, Cuba, and Peru, but, on account of the outbreak of the Revolution in China, he did not proceed. Unlike most other foreign educated students, he refrained from associating himself with the Revolutionary movement and lived quietly in Shanghai. Upon the formation of a Cabinet by the first Premier, Mr. Tang Shao-yi, he was made Minister of Communications, from which post he resigned later, owing to ill health. In 1913 he was nominated Minister of Washington but failed to receive the confirmation of the Young China Parliament, this being the penalty he paid for his aloofness from the Revolutionary movement. In November 1913, he became Master of Ceremonies to Yuan Shih-kai and in June, 1914, was appointed Minister to the Court of St. James.



Hsia Chia-fu, Chinese Minister to Washington.

THE MINISTER TO WASHINGTON

It is a co-incidence that Mr. Hsia Chia-fu, who is the new Minister to the United States, and who has already taken up his position, is also a native of Chekiang Province. He is 40 years of age and commenced his diplomatic experience by joining the Chinese Legation in Japan as an attaché some 15 years ago. Later he went to America, and from 1903 to 1908 was the Chinese Consul in New York. While in America he decided to profit by opportunities of education and took special courses in Columbia University. On his return to China in 1908 he became a Councillor to the Foreign Office, which post he held until 1910, when he was made Commissioner of Foreign Affairs in Yunnan. After the Revolution he took up the post of Director of the Tientsin Mint, and later was transferred to Newchwang as Customs Superintendent and Commissioner of Foreign Affairs. He was acting in this capacity when he was appointed to Washington as Minister.

CHANGES IN THE MINISTRY OF COMMUNICATIONS

In our last issue we mentioned that changes were to be effected in the executive arrangements in the Ministry of Communications. On July 21 a Presidential Order was published appointing the heads of the six departments into which railway and telegraphic affairs have been divided. Previously there were two bureaux—one for railways and one for telegraphs, a Director-General being in charge of each. Mr. Yih Kung-cho who presided over the Railway Bureau, has been made Vice-Minister of Communications, and Mr. Lung , who was Director-General of Telegraphs has been made Taoyin (Circuit Intendant) at Kweiyang, the Capital of Kweichow Province.

The new chiefs of the six departments are—Department of Railway Administration—Mr. Yuan Ling; Department of Railway Construction—Mr. Sheng Chi; Department of Telegraphs—Mr. Chow Wan-peng; Department of General Audit—Mr. Wu Ying-ko; Department of Railway Accounts—Dr. Wang Ching-chun (better known as Dr. C. C. Wang); Department of Telegraphic Accounts—Mr. Tsiang Tseng-wei.

This rearrangement of offices means a division of the labour which has hitherto fallen upon the shoulders of the Directors-General, and should go far to simplify and facilitate work in the Ministry. Of the officials selected for the above posts the *Peking Daily News* has the following to say—

Mr. Yuan Ling is a native of Honan, and at present serves as the Chief of the Store Department of the Tientsin-Pukow Railway. He has considerable experience in connection with railway administration, but his name is not much known to the public. His new appointment is said to have been effected through special recommendation of the President who knows him quite well.

Mr. Sheng Chi is a native of Chihli. At present he is serving as Chief of the Section of railway construction in the Bureau of Railway Administration.

Mr. Chow Wan-peng is a native of Kiangsu and was educated in America. He was the Director of the Telegraph Office in Shanghai during the closing years of the Ching Dynasty, and is a recognised authority on telegraphic matters.

Mr. Wu Ying-k'o is a native of Kiangsu. He at present serves as the Inspector of the Tung-Ching Railway.

Dr. Wang Ching-chun (C. C. Wang) is a native of Lanchou, Chihli Province. At present he is serving as co-director of Peking-Hankow Railway. Since finishing his education in America he has been kept busily employed in various capacities. In all that he has done he has shown thoroughness, diligence and singleness of purpose. As Vice-Chairman of the Commission of the Unification of Accounts and Statistics, which he was chiefly instrumental in forming, he has proved himself a most hardworking official and an earnest conscientious worker. So much confidence has Vice-Minister Yih Kung-cho, who is Chairman of the Commission, in him, that he generally leaves its conferences and its actual work to be done by Dr. Wang.

Mr. Tsiang Tseng-wei is a native of Chekiang and was educated in Japan. He is at present the Chief Secretary of the Bureau of Posts and Communications.

Besides the official changes made in the Ministry of Communications itself, Mr. Liang Tun-yen, the Minister of Communications, also directs his attention to the administrations of all the Government Railways. With the exception of Mr. Li Tsoi-chee, Director of the Peking-Mukden Railway and Mr. Chung Mung-yew, Director of the Shanghai-Nanking Railway, who will be retained in their present posts, all the present Directors of the Government Railways will be removed. It is said that Mr. Yuan Chang-k'un at present Director of Telegraphs in Shanghai will be appointed Director of the Tientsin-Pukow Railway, Mr. Chang Jen-kuang, Director of Peking-Hankow Railway; and Mr. Tseng Kun-hua, co-Director of the Peking-Hankow Railway.

Shortly after Mr. Liang Tung-yen took charge as Minister of Communications, he sent two of his Secretaries to inspect the account books of all the Government Railways. As it is too difficult a task for two men, special arrangements will be made towards securing the services of experts for the work, in order to find out any dishonesty or forgery that might have been committed.

LIAO RIVER IMPROVEMENT WORKS

An interesting development took place early in June in connection with the arrangement made between the Diplomatic Body at Peking and the Chinese Government for a resumption of work upon the Liao River near Newchwang, the Governor of Fengtien Province disregarding the instructions sent him from Peking by dismissing the engineer appointed to carry on the work. The scheme for the improvement of the Liao River has, however, passed through several vicissitudes, and the incident which now draws attention to the situation is merely one of many. Work was actually begun upon the improvement of the river some six years ago, when Mr. W. R. Hughes, who had been engaged upon the construction of Chingwangtao Harbor, and the proposed harbor at Hulutao, was engaged to put into effect the proposals for the betterment of riverine conditions in the vicinity of Newchwang and Yingkow. These commercial ports were becoming seriously affected owing to the increasing volume of water which was finding its way to the sea by a new branch of the river known as the Schuangtaitze, which was formed some twenty years ago. Newchwang and Yingkow were finding themselves high and dry so far as junk traffic was concerned by the growing shallowness of the main stream, and to improve that state of affairs it was decided to build a weir across the Schuangtaitze, which was carrying to the sea more than seventy per cent. of the water of the Liao. At a bend on the river the weir was built, but only in the face of the protest of a large section of the inhabitants of the locality who were worked into a state of agitation by a class of people who found value in the branch as a means of reaching the interior without the knowledge of the Customs authorities who have stations on the main stream. Allegations were constantly being made that the drinking water was being interfered with, and that plea having been overcome by provision having been made for a certain amount of water to pass the weir, it was then alleged by inhabitants up the Liao that the weir was backing up the river to such an extent that floods were caused. One resident of a locality eighty miles distant solemnly averred that he had been flooded out of house and home as a result of the weir. After $100,000 had been spent upon the weir, and when the branch was within fifteen feet of being closed, the people restrained themselves no longer. They attacked the workmen, drove them by force from the site, threw the pile drivers and other material into the Liao, and stole or burnt the timber being used on the work. Progress was thus effectively stopped, nor could the officials persuade the people to allow the work to continue. For two years, therefore, nothing has been done, but the increasing gravity of the situation of Newchwang and Yingkow compelled the merchants and commercial bodies again to take steps to have the vagrant Liao attended to. The result was the arrangement between the Consular body and the Chamber of Commerce at Newchwang for a River Conservancy scheme to be carried out with the aid of a tax upon shipping to deepen the bar, while the work on the upper part of the river was to be done by the Chinese Government. This proposal was placed before the Peking Government by the Diplomatic body and eventually an agreement was arrived at, it being stipulated that Mr. Hughes, who had previously been engaged upon the work, or some other equally competent engineer, should be the engineer-in-chief. The Peking Government thereupon instructed the Governor at Mukden to arrange for the commencement of operations, and his reply was to summon Mr. Hughes to Mukden, where he explained that he had no money for the purpose and believed the best solution of the matter would be to pay off Mr. Hughes, whose original agreement was expiring. Naturally this disregard of instructions from Peking, coupled with his cavalier treatment of the agreement come to with the Diplomatic Body and the claims of Mr. Hughes to consideration, incensed the Diplomatic Body, who lost no time in lodging a strong protest. The result was, however, that Peking adhered to its agreement and again instructed the Governor of Mukden to carry out its orders. Mr. Hughes will, therefore, proceed with his arrangements for a resumption of operations, and the future is upon the knees of the—erstwhile—hostile inhabitants.

THE SHANGHAI-HANGCHOW-NINGPO RAILWAY

NATIONALIZATION OF THE LINES

The nationalization of the railway which is in operation between Shanghai and Hangchow, and which is under construction to Ningpo, is an important development of the Chinese Government's policy of controlling all railways in the country which may form sections of future trunk systems. The line was built by two companies, one operating in Kiangsu province, and the other in Chekiang province; the right of construction being granted to the provincials by an Imperial Edict issued in 1905.

In 1906 construction work was begun, but it proceeded slowly and unsatisfactorily, and in March, 1908, the Government signed an agreement with the British and Chinese Corporation for a loan of £1,500,000 to carry on the work. Opposition was at once raised by the provincials, and renewed efforts were made to raise the money necessary to carry on the construction work. On the plea that the "sovereign rights" of the country were being sacrificed whenever a railway loan was signed with foreign financiers, the agitators managed to have a company formed in Kiangsu and one in Chekiang, and their claims to the right to construct and operate the line were recognised by the Government.

The loan agreement with the British and Chinese Corporation could not be cancelled, however, and though an Englishman was nominally Chief Engineer of the line the people resolutely refused even to allow him to walk over the route. The Government was placed in a difficult position, but in an endeavor to make the best of the situation drew up, with the two provincial Companies, a set of regulations whereby they might receive from the Government deposits necessary to build the railway. The situation thus created was the extraordinary one of the Government lending to the Companies money which the Companies objected to the Government receiving from foreigners at one-half per cent. higher interest than it was paying to the British and Chinese Corporation, Limited. The loan money had never been touched, though the Government had from time to time endeavored to persuade the British and Chinese Corporation that it should permit the Government to utilise the funds in other directions. The most persuasive arguments naturally fell upon unresponsive ears, and the Government went on paying five per cent. interest for the loan it could not use for five years, failing in the meantime to effect any satisfactory continuous arrangement with the provincials.

Though the latter built the lines they have never been able competently to manage them. Disputes prevented a junctioning of the two systems for a long time, and construction work proceeded in a desultory fashion. Shareholders in the Company never received any dividends, and owing to extremely bad management a railway which should have paid handsomely annually showed a loss. The Government several times urged the people to hand over their property upon a valuation to the Board of Communications to be managed as a State concern but they would have none of that, and carried on a vigorous campaign in opposition to the proposal of nationalisation of railways made by the Minister of Communications in 1910. The agitation was so great throughout the country that it practically precipitated the revolution. By 1912-13, however, the Kiangsu people realised that they need hope for no return on their investments unless a change were made, and, inspired by a few wise shareholders, consented to a resumption of the property by the Government as the only method of regaining any of their money.

Negotiations went on for some time to effect an arrangement with the Government and at a meeting of shareholders of the Kiangsu Company on April 2, 1913, a resolution was carried approving of nationalisation.

On April 10, therefore, a formal petition was presented to the Government, the Company appointing Mr. Yang Ting-tung, the present Director of the Mining Bureau, to represent them in negotiations with the Ministry of Communications. The result was the preparation of a bill of thirteen articles to be submitted to the Cabinet, the proposal being made that the amount necessary to buy out the shareholders should be drawn from the loan which had so long lain in the Hongkong and Shanghai Bank.

Kiangsu Railway,—Type of Bridges.

Ultimately the bill was approved by the Cabinet, and the work of taking over the property commenced, Mr. Chung Mung-yew, the Managing Director of the Shanghai-Nanking railway, and Mr. Chang Shih-jen, of the Chinese Telegraph Administration, at Shanghai, proceeding on June 18, 1913, to the head offices of the Company to arrange the auditing of accounts. Seven assistant accountants were employed and the Company was instructed to open new books as from July 1, 1913, but the outbreak of the rebellion caused a suspension of work. At the end of August, 1913, order was restored in the locality, and the work of nationalisation was resumed.

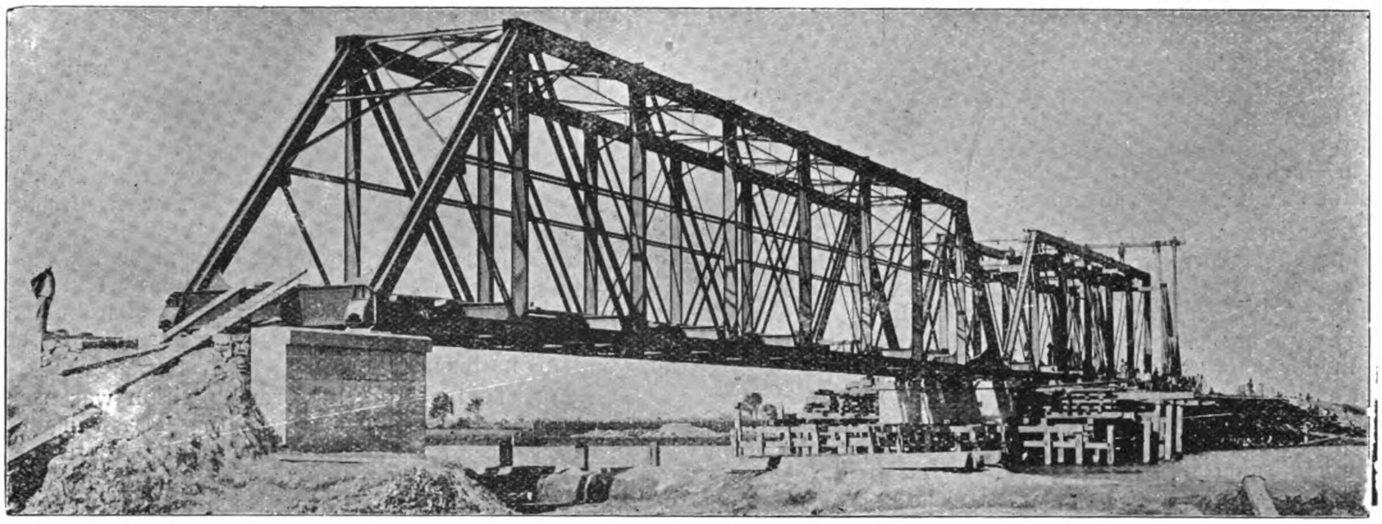
A little difficulty which has to be adjusted in connection with the taking over of the line is concerned with a loan made between the Kiangsu Railway Company and a Japanese firm during the existence of the Revolutionary Government at Nanking. A sum of Yen 3,000,000 was then raised upon the security of the railway itself at an annual interest of 8 per cent., the loan agreement providing that Japanese engineers should be given preference over other foreigners and if further capital were needed the Japanese should have the preference of supplying it. These terms naturally conflict with the loan originally made with the British for the construction of the line, but no doubt an amicable arrangement will be effected whereby the Japanese loan will be repaid and the "rights" secured by it be abrogated.

THE NATIONALISATION AGREEMENT.

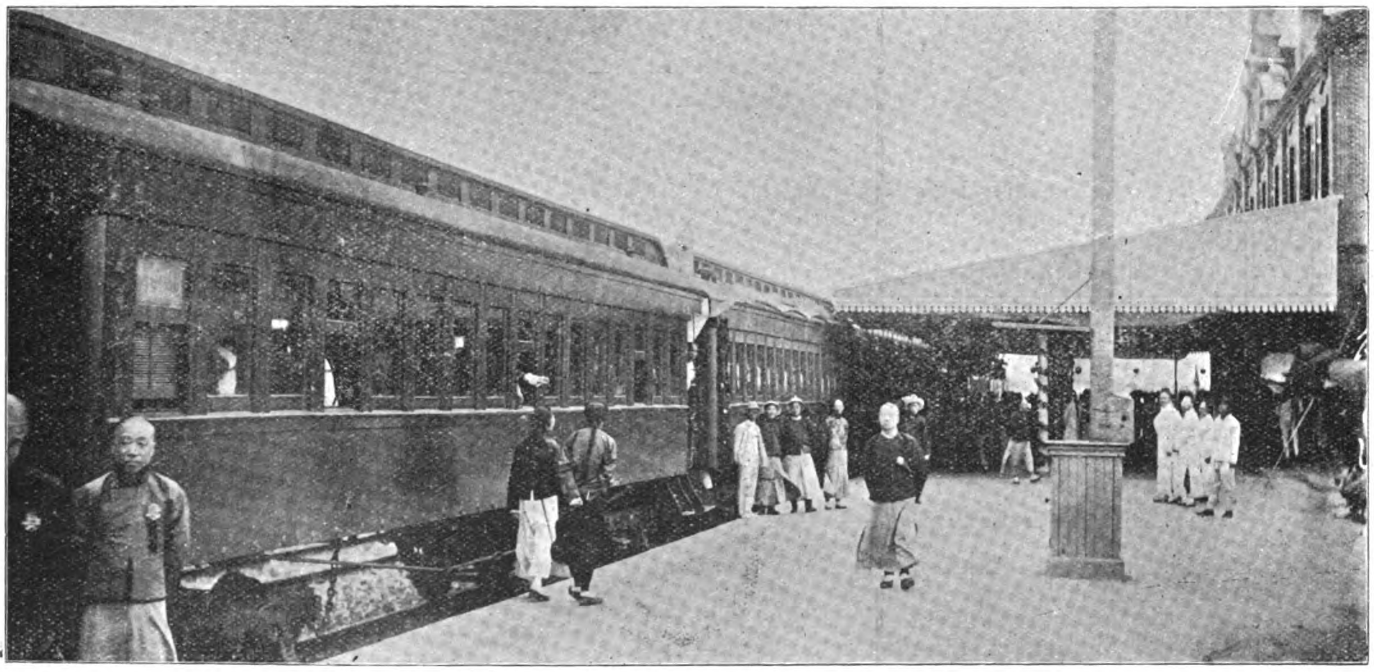
The agreement come to between the Government and the Kiangsu Railway Company to effect the nationalisation of the line was as follows:—

An agreement made this twelfth day of the sixth month of the second year of the Republic of China (June 12, 1913) between the Kiangsu Railway Company (hereinafter called "the Company") represented by Mr. Yang Ting-tung (hereinafter called "the representative"), and the Board of Communications (hereinafter called "the Board.")

WHEREAS the Shareholders of the Company are willing to hand over this Railway to the Government; AND WHEREAS at a Shareholders' meeting Mr. Yang Ting-tung was appointed representative with full powers to negotiate with the Board regarding all matters concerning the above Railway; now, therefore, it is agreed as follows:—



KIANGSU RAILWAY.—Bridge over the Zia-tang.



KIANGSU RAILWAY.—The Station at Shanghai.

ARTICLE I.—The Company agrees to hand over all the existing line of Railway from Shanghai to Fengching, and all properties and rights belonging to the railway to the Government according to the decision arrived at a Shareholders' meeting. The Railway shall be controlled by the Board direct and all rights formerly belonging to the Railway shall be cancelled.

ARTICLE II.—All the shares of the Company consisting of principal shares valued at $3,476,523, and interest bearing shares valued at $1,073,895, shall be repaid by the Board with Treasury notes within 5 years beginning from the date of taking over of the Railway. Payments shall be made in three equal instalments per year; should the Government be prepared to make payments earlier than the time stated the same can be done upon two months' previous notice.

ARTICLE III.—At the commencement of the date when the Railway is taken over by the Government the Board shall continue to pay interest on the unpaid capital of the shareholders in accordance with the rate originally arranged by the Company. The Solar calendar shall be used in reckoning interest. All interest to be paid at the time when the principal is repaid.

ARTICLE IV.—All Promoters' Shares are hereby cancelled and shall not be recognised as Ordinary Shares, and no repayment of capital or interest thereon shall be made.

ARTICLE V.—The Rules and Regulations for deposits for the Kiangsu-Chekiang Railway drawn up by the Board of Posts and Communications on the 15th day of the 3rd moon of the 34 year of Kuang Hsu of the Ching Dynasty, consisting of 14 Articles shall be considered as null and void, so far as the Kiangsu Railway is concerned.

ARTICLE VI.—Upon the dissolution of the Company, a special Accounting Office shall be established. The regulations

governing the organisation of the said office shall be drawn up separately.

ARTICLE VII.—All *bona fide* deposits and outstanding debts of the Railway shall be taken over by the Board, but all such shall be limited to the amounts contained in the sixth annual report of the Company.

ARTICLE VIII.—From the time this agreement is signed up to the time the Railway is actually taken over by the Government the Company shall undertake to manage and control all properties, accounts, receipts and disbursements of the Company with the utmost discretion, and shall bear full responsibility.

ARTICLE IX.—All unexpired agreements and contracts relating to employees, transportation, leasing of land, etc., shall continue to be effective if there is no unusual circumstance.

ARTICLE X.—Upon the signing of this agreement the Board shall delegate officials to audit the accounts of the Company. The Company shall instruct the Accountants concerned to make inventories of the property and submit all books, contracts and vouchers to the officials for examination.

ARTICLE XI.—The day for taking over the Railway shall be the 1st day of the 7th month of the second year of the Republic (July 1, 1913.)

ARTICLE XII.—The Board shall not be held responsible for the repayment of all sums not specified in this agreement.

ARTICLE XIII.—All detailed procedure for the carrying out of the above mentioned provisions shall be discussed between the representative and the Board

(Sgd.) Yang Ting-tung,

Representative of Kiangsu Rly. Co., and sealed by the

BOARD OF COMMUNICATIONS.

The Kiangsu Railway

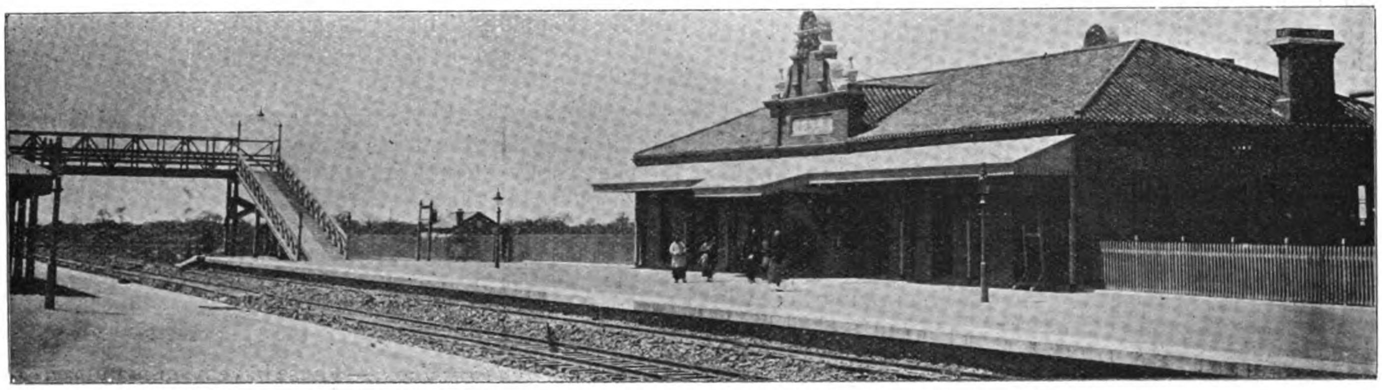
The nationalisation of the Kiangsu Railway and the criticism which have for a long time been levelled against this line lend interest to a statement of the condition of the railway as ascertained upon careful examination by the engineers deputed to make a report for valuation purposes.

It is reported that the alignment of the railway generally is good, the maximum gradient being 1 in 250 but, as only a few short lengths of this have been used, the line is very easy.

KIANGSU RAILWAY.—Station and Offices at Shanghai.

Formation.—In so far as formation is concerned the standard width adopted is 18 feet, and throughout this is well maintained; while in some places there is considerable excess, 23 feet being measured. It is uneven in parts and generally inclined to be low. Good cesses are left along all banks with the exception of the approaches to Bridges Nos. 30 (Peh Yao King) and 31 (Zia Tong). The slopes to 15 feet banks are steep, but are well grown over with vegetation and show no signs of slipping or of undue erosion. The slopes of banks in creek diversions are cut, or have eroded so that they are almost vertical and may slip in, to the detriment of the waterway and the adjoining property.

Little attention appears to have been given to the convenience of water borne traffic in the construction of this Railway. In several cases the line is taken through creeks of considerable width without opening of any description being provided.



KIANGSU RAILWAY.—Sungkiangfu Station.

Good approach roads to all stations from the nearest town or village are an excellent feature.

Bridgework.—The masonry of bridges generally is of a substantial character.

The steel work is in good condition and is stated to be

designed for a load of two tons per lineal foot which would be amply strong for all traffic requirements.

The drawings of bridges said to be completed from actual dimensions show foundations of ample design. Little settlement has so far been noted in any of them.

The water ways provided are inadequate, and further provision is necessary in several places. Even at the major bridges the free flow of water has been considerably impeded by mounds of rough rubble, and constant care must be exercised in noting and preventing erosion.

An additional opening is being made near the Lo Tien Wan bridge consisting of a two 40 feet span bridge. Here again rubble is being put in, considerably reducing the effective water way. Other measures adopted to remedy the inadequacy of the water ways consist of two sets of six 2 feet culvert pipes. This is an expensive and ineffectual method of obtaining the desired result.

Bridges Nos. 43, 45 and 46 give particularly inadequate openings. The tides are very strong here and the water rushes through like a mill race, causing considerable erosion. Divers are periodically employed to investigate and report on the condition of the various river beds but no records appear to be kept of this essential information. Various expedients have been adopted to break the force of the tides, in one case a rubble dam is put through the up stream side of a creek of considerable size. Rubble has been profusely dumped into the streams with the evident intention of preventing erosion.

The steel work of the majority of the bridges is carried on timbers instead of bed stones which necessitates constant renewals.

Fencing and Boundaries.—Fencing is generally of timber, open pale design. The Shanghai yard is fenced with a low bamboo fence. The boundaries are well marked with stones. Throughout the line an adequate width of land appears to have been taken. At Shanghai little provision is made for further development.

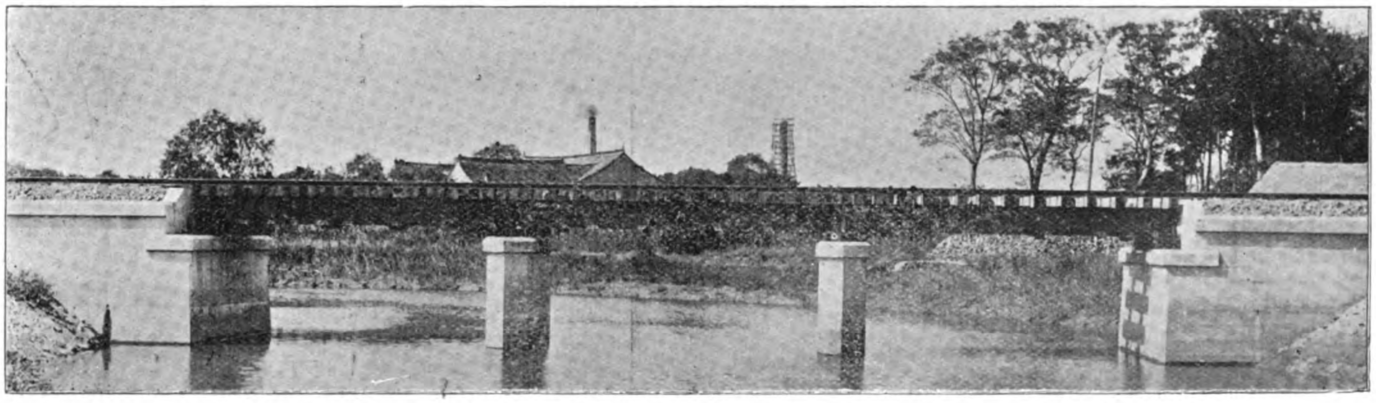
Signs.—The line is measured in "li", and marked with Cast Iron Standards of good design. Gradient posts are of cast iron and good design. "Warning" or "Whistling" notice boards are erected, where required, but the arms are generally too close to passing trains for safety.

Communication.—This is provided throughout by electric telegraph and telephones to all stations. The poles are slight and the wires strained up tightly, with insufficient guys at changes in direction.

Track.—Ballast—The ballast is a hard limestone of good quality. Although generously (even extravagantly) provided along the sides of the line there is not sufficient depth under the sleepers. On the first ten miles there is practically none. The method of piling up the ballast at the ends of the sleepers and the low formation unduly accentuates the amount of ballast and makes it difficult for the permanent way gangs to work. The ballast is very coarse and could be broken up with advantage. There is a large stock of ballast in hand.

Permanent Way.—The sleepers are of three varieties, the names of which were not obtainable. The prices are No. 1. Tls. 1.80; No. 2. Tls. 1.20; No. 3. Tls. 0.93. The major portion are of the No. 3 variety. No records of the life of these sleepers have been kept but it was stated that the No. 1 lasts about two years, the No. 2 about 1 year and the No. 3 is only serviceable for 9 months. The number of sleepers renewed per annum is between 20 to 30 thousand the whole line being practically resleepered every three years. The principal portion of the work of the gangs is therefore the conveyance of, and the renewal of sleepers. Taking this into consideration the running surface of the line is good. A considerable number of sleepers need immediate renewal and longer life might be obtained from even the poorest quality by better road bed drainage. The sleepers taken out are so rotten that they crumble to pieces in the hand, so have long since passed their short period of usefulness in the line. Some new sleepers were examined and found to contain a large proportion of sap wood. The standard size is 8 feet long, 9 inches wide by 6 inches deep. No holes are drilled for the dog spikes, consequently a good deal of splitting, especially with the No. 1 variety, is experienced. Apart from this the difficulty of obtaining correct gangs is materially increased.

Rails.—The rails are 30 feet long, 75 lbs. per yard, rolled at the Hanyang Iron Works. No records are kept of broken rails, but 1% was given as the proportion. A good deal of chipping at the ends of rails was noticed and flaws in the heads were fairly frequent. The presence of some very bad chilled iron wheels on the rolling stock may be accountable for some of this damage.



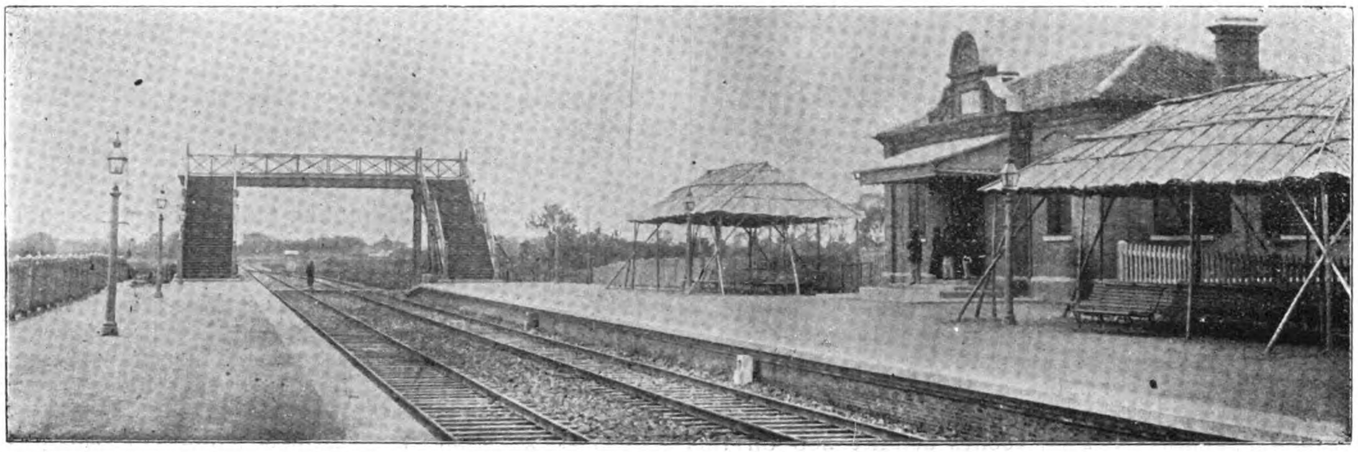
KIANGSU RAILWAY.—Type of Bridge Work.

Fastenings.—Angle fishplates are used with six fish bolt holes. The bottom table is notched for two dog spikes. They appear amply strong for the type of rails adopted. The dog spikes used originally were 5½ inches long by ½ inch square, these were found to be too light and the latest pattern adopted is 6¼ inches long by $\frac{7}{12}$ inch square. The Shanghai Nanking Railway pattern is 5 inches long by ¾ inch square, a much heavier spike. After the passage of a fast train it was noticeable that a large proportion of the spikes were partially drawn.

Points and Crossings.—These have been manufactured locally and are of weak design. The switch tongues are badly chipped. The leads adopted in the main line at loop stations are 1 in 12 facing 1 in 10 tralling. The arrangement, however, is not of special utility as there is no "Up" and "Down" the lines being used indifferently for both ways, governed by the crossing of trains at the various loop stations. All points and crossings are from ¾ inch to 1 inch slack to gauge. The gauging of the main line throughout is faulty. The standard gauge was tested and found to be ¼ inch full, so correct gauge is not possible. This fact is accountable for an excessive amount of wear and tear on permanent way, engines, and rolling stock. The running surface is very fair on tangents, but faulty at curves. The alignment of some curves is not true. The curves generally are

of easy radii with the exceptions already noted. Superelevation is not correctly obtained, on the No. 4 curve it is excessive. On sidings also superelevation is excessive and in most cases superfluous.

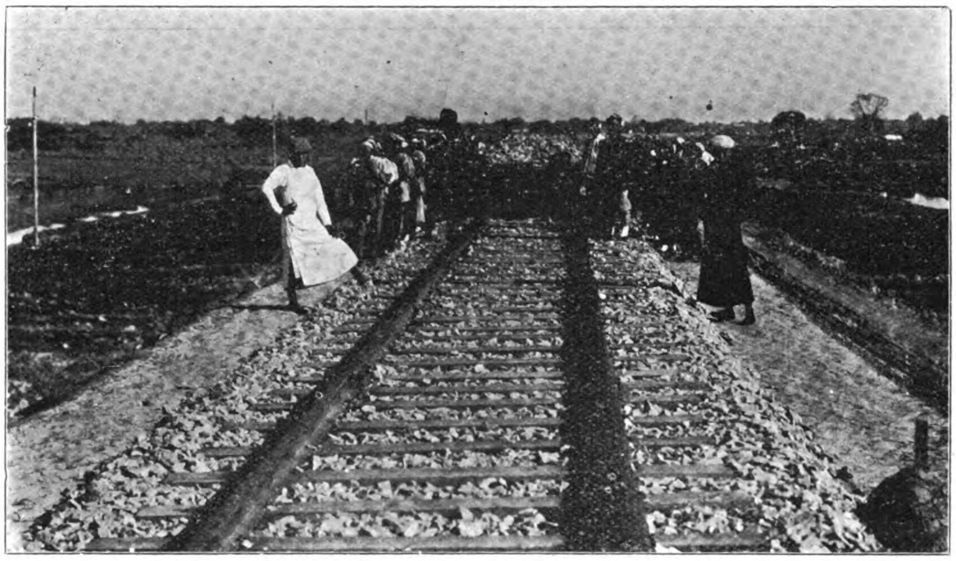
Water Supply.—The water supplies at Shanghai, Sungkiang, and Fengching are for locomotive purposes only. Shanghai is supplied by a pulsometer. At the other two stations hand pumps are used. The position of the water tank at Fengching is not satisfactory as it is situated about half a mile outside the station on the main line. A turntable 65 feet diameter is provided at Shanghai and is in excellent order.



Kiangsu Railway.—Lung-hua Station.

Stations and Buildings.—The buildings throughout are of substantial construction and are generally in good condition. They appear to be adequate, but booking arrangements for passengers in some cases are cramped. The paint used leaves much to be desired. It is of very inferior quality, of local origin, and does not last satisfactorily for twelve months. All platforms are of the high type with brick walls and concrete copings. With the exception of Shanghai Station they are generally too short. The surfacing of platforms is fair. There are passenger shelters at all stations with the exception of Zah Hu Tang. The footbridges at the various stations are substantial design and in fair condition. A good type of crossing gate and house is provided at principal crossings and all are in good order. The staff quarters and gang house are well built, give ample accommodation, and are well maintained.

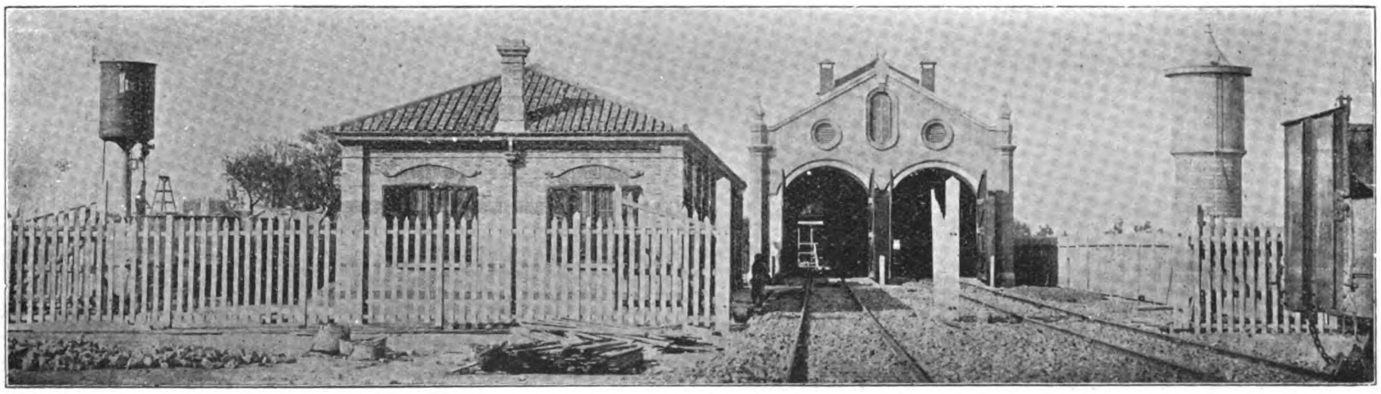
Lighting.—Shanghai Station and offices are electrically lighted from the local supply. Other Stations have oil lamps.



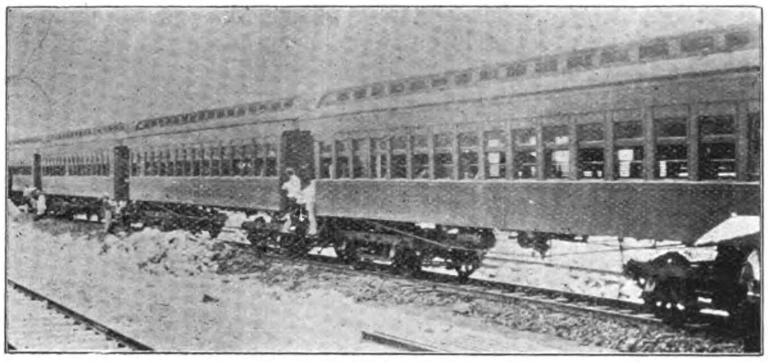
Kiangsu Railway.—The road bed.

Signals.—Signals are provided at each station, one at either end, 1,000 feet from the points. There is no interlocking so that both signals may be pulled off together. At some stations where the signals are not in use owing to the loop being temporarily disconnected, the arms have not been removed and no provision has been made to indicate this. Drivers therefore continually pass these signals at danger.

Tools.—The permanent way tools are generally in good serviceable condition, each gang being provided with an adequate supply. Every gang has a heavy material trolley but no precautions are taken to secure these when off the line. The average number of beater picks used per annum is 2,000 and shovels are used at the rate of 200 per annum. For a similar length of line on the Shanghai-Nanking Railway 500 beater picks



Kiangsu Railway.—Locomotive Shed and Water Tank at Shanghai.



KIANGSU RAILWAY.—Passenger cars.

and 100 shovels per annum are used. All permanent way gauges tested were found to be incorrect.

Permanent Way Gangs.—There are 3 track foremen; 20 gangs consisting of 1 ganger and 8 coolies; 2 flying gangs 20 coolies each. As a comparison on a similar length of line the Shanghai-Nanking Railway has 95 coolies against 200 on this Railway.

Records and Reports.—Track foremen report once a month to the Engineer in Charge, beyond this there seems to be nothing. No records of any description appear to be kept so that it is not possible to compare costs or draw reliable conclusions for the general control of expenditure and improvement of maintenance.

General.—The line is not in good running condition but with expert supervision it could be improved in due course and the present high expenditure considerably reduced.

Rolling Stock.—The rolling stock consists of eight engines, 36 passenger cars, 2 passenger car underframes, 81 wagons, 1 steam pump with boiler, 2 No. 16 challenge hand pumps, 14 screw Jacks, 1 pit Jack, 1 drilling machine, 1 lathe and 1 trolley.

Coaches.—2 First class coupe passenger cars on 55 feet 6 inches underframes, with seating accommodation for 42 each.

2 First and Second class composite cars on 60 ft. 3 in. underframes, seating accommodation 24 first and 40 second each.

1 second class passenger car on 55 ft. 3 in. underframes, seating accommodation for 58.

2 second class passenger kitchen cars on 55 ft. 0 in. underframes seating accommodation for 40 each.

2 second class passenger cars on 55 ft. 0 in. underframes, accommodation for 68 each.

19 Third class passenger cars with a total seating accommodation of 1804.

3 Fourth or Coolie class cars on 56 ft. 8 in. underframes with seating accommodation for 132 each.

2 Dynamo cars on 37 feet underframes.

1 Mail van on 17 ft. 6 in. underframes.

2 Brake vans on 15 ft. 6 in. underframes.

Wagons.—19 30-ton steel covered goods' wagons on 30 ft. 8 in. × 9 feet. 7 in. underframes.

4 30-ton steel covered goods' wagons on 33 ft. 0 in. × 9 ft. 7 in. underframes.

4 30-ton steel covered goods' wagons on 33 ft. 0 in. × 10 ft. 0 in. underframes.

10 30-ton medium sided wagons on 33 ft. 3 in. × 9 ft. 3 in. underframes.

2 cattle wagons on 33 ft. 0 in. × 10 ft. 0 in. underframes.

2 pig wagons on 33 ft. 0 in. × 10 ft. 0 in. underframes.

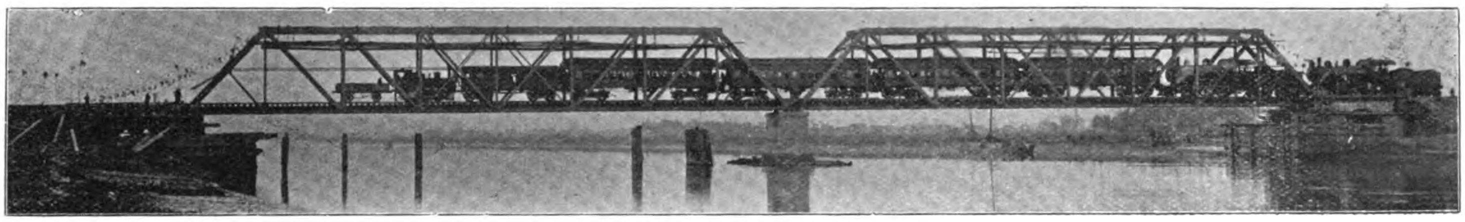
Engines.—No. 5 is a small shunting tank engine of the 0-6-0 type British built. Cylinder 13 in. × 19$\frac{5}{8}$ in.; diameter of wheels 3 ft. 1$\frac{7}{8}$ in.; steam pressure 170 lbs.; grate area 14 sq. ft.; water capacity 660 gallons; coal capacity 1980 lbs.; weight 28 tons;

No. 7 Engine is a shunting tank with an extra tank attached for water, type 0-8-0 German built. Weight 45 tons; diameter of wheels 3 ft. 10 in.

Nos. 1, 2 and 3 goods' engines, these are American built and of the 2-6-0 type. Cylinder 20 in. × 26 in.; diameter of driving wheels 5 ft. 4 in.; wheel base 22 ft. 6 in.; steam pressure 180 lbs.; water capacity 5,000 gallons; coal capacity 6 tons; weight of engine and tender 110 tons.

Nos. 6, 8 and 9. passenger engines, German built of the 4-4-0 type. Cylinder 16$\frac{15}{16}$ in. × 23$\frac{5}{8}$ in.; diameter of driving wheels 5 ft. 8$\frac{29}{32}$ in.; wheel base 24 ft. 3$\frac{11}{32}$ in.; steam pressure 168 lbs.; weight 85 tons.

All the passenger coaches (excepting the two brake vans and mail van) are fitted with the Westinghouse Brake, electric light and oil lamps; electric light is obtained from the two dynamo cars, these being fitted with a dynamo slung underneath and run off the axle. One car has 19 batteries and the other 17.



KIANGSU RAILWAY.—Zia-tang Bridge.

As there are only two dynamo cars, the fast and express trains are the only ones that can be lit electrically.

The goods' wagons are fitted with hand brakes only, a number of these, however, are out of order.

Practically the whole of the engines and carriages and a number of wagons require thoroughly overhauling.

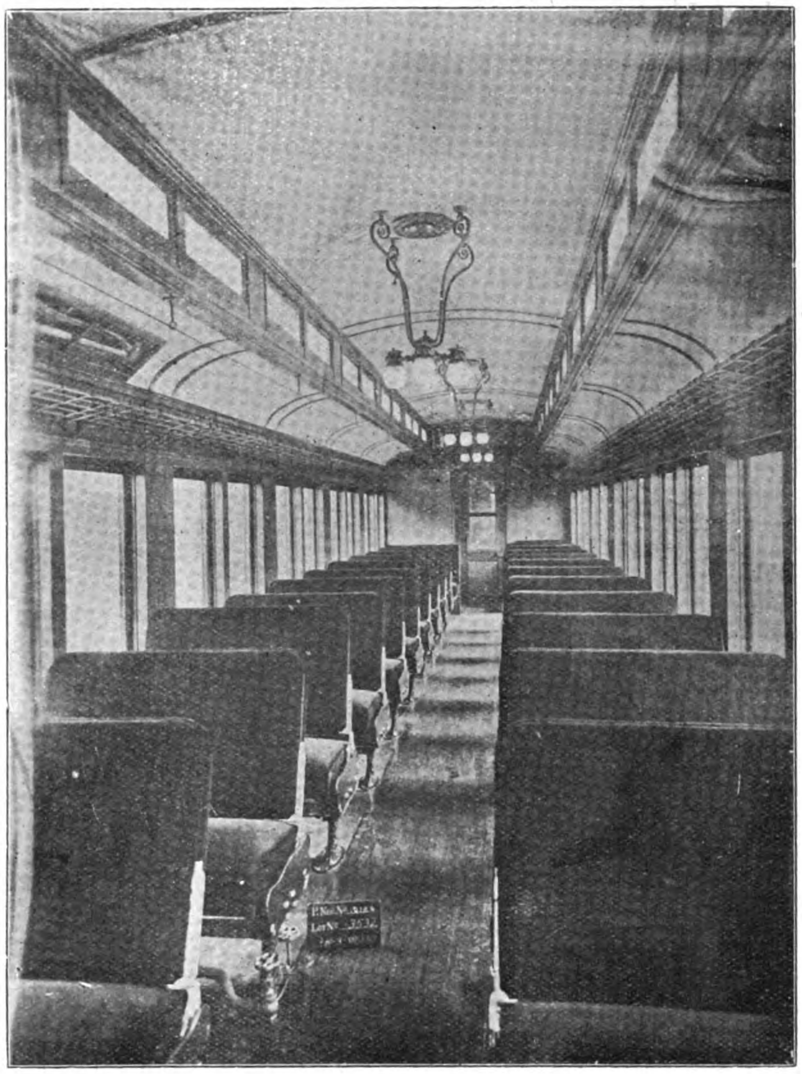
The passenger and tank engines are suitable for the work they have to perform but the goods engines are far too heavy for the weight of the rails, and much too expensive to run economically the service they are on.

The engines are burning on an average, 128 lbs. of coal per mile.

KIANGSU RAILWAY.—A typical station.

The Chekiang Railway

The vicissitudes which attended the operations of most Chinese privately owned railways also fell to the lot of the Chekiang Railway Company. It was organized with a capital of $5,000,000 to build and construct the line from Fengching to Hangchow, in circumstances similar to those attending the organization of the Kiangsu Railway Company. In June, 1908, in order to provide funds for the extension to Ningpo and the construction of the Chien Tang bridge at Hangchow, an increase of capital of $15,000,000 was authorized, to be paid in 5 yearly instalments. Only Chinese were permitted to subscribe or hold stock and the number of shareholders was reported to be over 53,000, about 40,000 of whom were coolies, farmers and small tradesmen, some holding as low as $5.00 in shares. The first call on the new issue of $3,000,000 was reported to have been paid in.

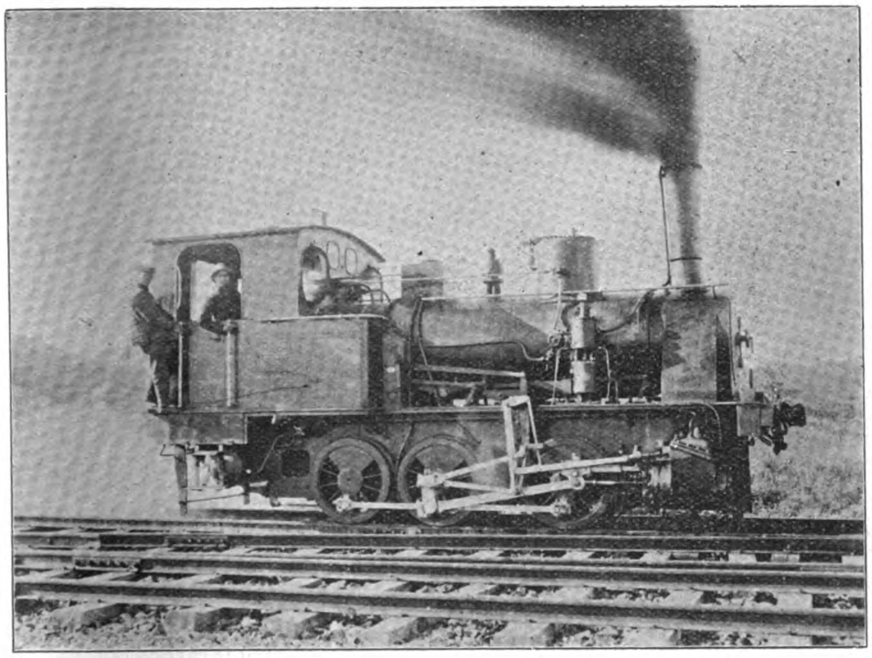


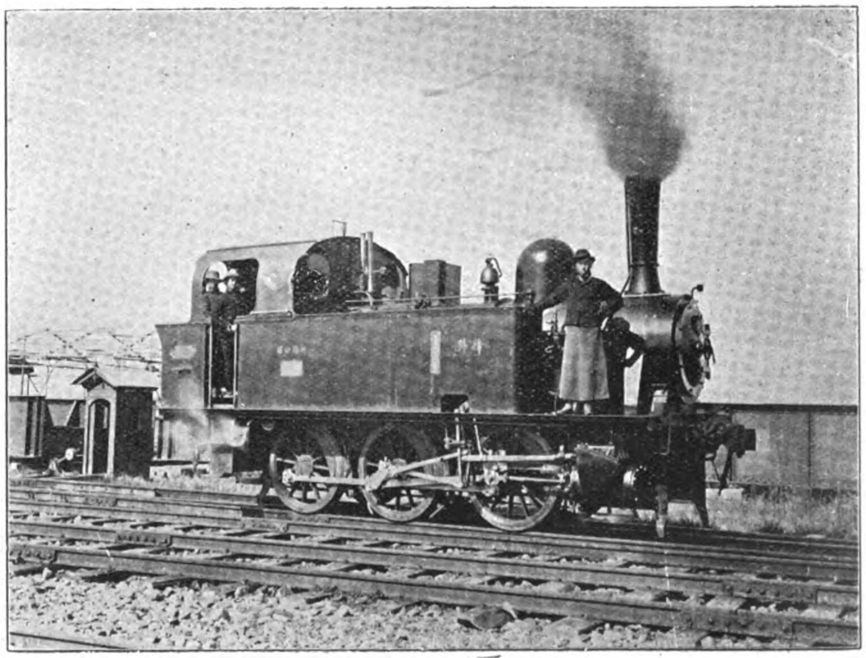
CHEKIANG RAILWAY.—First Class Passenger Coach.

Up to the completion of the two roads, both companies had ample funds at their disposal without recourse to the British loan to carry out all their work and purchase all materials. Of the $1,500,000 loan, the Board of Communications allotted a certain sum to the two companies at 5½% interest, charging 7% of the amount as premium. Although the loan provided for the employment of a British engineer and the purchasing of the materials through the British and Chinese Corporations the Chekiang Railway Co. declined to avail themselves of the purchasing agents' services and in consequence has had to pay the sum of $250,000 Mex. in lieu of the 5% commission stipulated in the Loan agreement.

The Chekiang Company, not needing its share of the British Loan, loaned the money to Chinese Banks at a higher rate of interest than that exacted from them by the Yuchuanpu (Board of Communications). The actual cost of the Fengching to Hangchow line was $43,000, Mex. per mile including cost of earthwork, tracks, stations and all charges. The branch line from Zah Kow to Hengleng Chiao cost $79,200 Mex. per mile, exclusive of rolling stock. It has 8 major bridges with spans over 40 feet; 111 minor bridges with spans from 10 to 30 feet. The waterway opening per mile is only 22 feet. The country traversed by both the Chekiang and Kiangsu Railways is a net work of canals and waterways the natural highways of commerce and trade in this low lying section. The closing or narrowing of those streams by cofferdams to the detriment of the great junk and river traffic was prohibited by the authorities so in many instances the railway engineer put into practice the old scheme of building one abutment at the water's edge, the other on dry land to one side, and then after completion, the shallow canal was diverted from its old channel to the new ones between the abutments. The line is practically on the surface throughout, and the cost per mile should have been much less than it was.

The ties on both lines which were purchased in Japan, are of standard sizes 8 ft. × 8" × 6" spaced 2 ft. 4 in. between





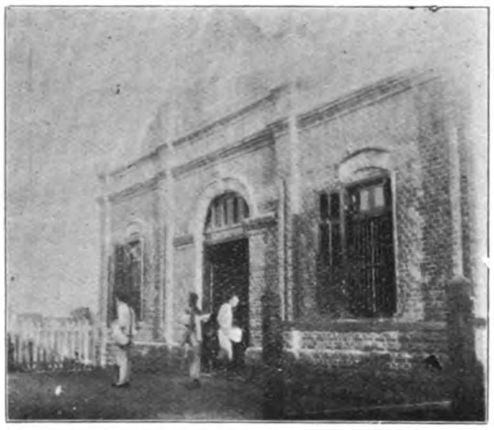
CHEKIANG RAILWAY.—German "Borsig" Locomotives.

centers. They cost delivered No. 1 Tls. 1.80; No. 2 Tls. 120 and No. 3 Tls. 0.93. Many had to be renewed after one year's service. The ballast is limestone and sandstone secured from quarries near Hangchow with rail connections with the main line. There is no ballast under the road on the Fengching section. The cost delivered at the track was about 60 cents Mexican or 25 cents per cubic yard.

The entire line from Shanghai to Hangchow is 116 miles long. The Chekiang section has in addition 36 miles of sidings. The line is single track, standard gauge and the rails of 75 lbs. to the yard, of Standard Section, 10 meters long, laid with even joints. These were manufactured at the Hanyang Iron & Steel Works, opposite Hankow.

The Chekiang Railway has 15 depots and the Kiangsu line 10.

On the Chekiang Railway there are no grades of more than 2-10 of 1%, and no curves of more than 3 degrees: labor is the cheapest in the world, and there is only about $2,200,000 gold invested in the property. At the outset, the passenger receipts alone between Kashing and Hangchow, a distance of 60 miles, averaged $3,000 Mexican per diem.


CHEKIANG RAILWAY.—Third Class Station.

It has been mentioned elsewhere that considerable difficulty was experienced in persuading the proprietors of the Chekiang Railway that their real interests lay in agreeing to the taking over of the line by the Ministry. Local pride and prejudice generated considerable opposition against the proposal and at meetings of shareholders great heat was shown. Gradually, however, wise counsels prevailed and on March 1, 1914, the Company shareholders met at Hangchow and agreed by 9,757 votes to 1,428 votes to sell out their shares to the Government. The acquirement of the Kiangsu section of the railway by the Government made the sale of the Chekiang section inevitable, but it was not until a considerable amount of ill-feeling had been displayed that the resumption by the Government was agreed to. Since then active investigations have been made to determine an equitable figure at which the line should be taken over. This has been a task presenting many difficulties. The system of keeping accounts left much to be desired, and perhaps no better proof of the imperative necessary of uniformity in keeping railway accounts could be found than the state of things which exists on this line. Gradually, however, matters are being straightened out and it is hoped that shortly the formal transfer of the line will take place. Probably the amount eventually paid to the Chekiang Railway Company will be in the neighbourhood of nine and a half million dollars. It has to be remembered that the Chekiang Railway includes the portion from Ningpo the Tsao Ngo River and that 70 miles has to be completed.

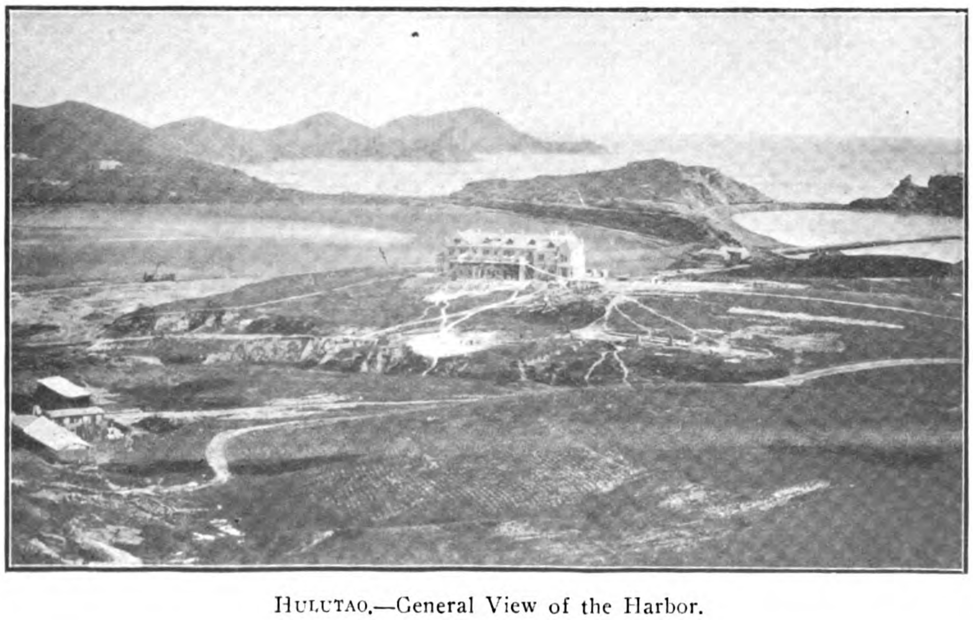
It is understood that considerable expenditure will be required to bring the line into a safe and sound condition. In many respects it has been neglected and work which would have cost comparatively little if done in time will have to be carried out at a greatly increased cost. This, however, is a minor consideration. The really important thing is that at last the line is to pass under the control of the Central Government, and there is every reason to believe that it will henceforward be a valuable addition to the communications of the country.

HULUTAO AS A CHINESE PORT

DESCRIPTION OF THE HARBOR IMPROVEMENT PROJECT

The steps which are now being taken by the Chinese Government to open Hulutao and other centres in North China to foreign trade draw particular attention to the natural advantages and possibilities of Hulutao as a harbor for the accommodation of ocean going steamers and a shipping centre for a rich and extensive hinterland.

Hulutao is situated on the coast about 110 miles north of Chingwantao, and is connected by a branch line with the Peking-Moukden railway at Lienshan, which station is some seven and a half miles distant. It is 31 miles from Chinchow, and, taking Moukden as a centre the distance to Hulutao is 184.16 miles, while the present line from Moukden to the seaport of Dalny is 246.7 miles, an advantage in favor of Hulutao of 62½ miles shorter for freighting purposes, and correspondingly an increased advantage for every point from Moukden to Lienshan. Hsinminfu is 37 miles from Moukden or 147 miles from Hulutao, and 283 miles from Dalny, so that cargo going to Hulutao from Hsinminfu district would have 136 miles shorter distance to be carried in order to reach the sea for shipment than if it went via Dalny. The distance from Moukden to Chinwangtao is 30 miles further than from Moukden to Dalny. The distance from Moukden to Yinkow by the South Manchurian Railway is 112 miles, or 72 miles nearer than to Hulutao, but the distance by the Chinese railway is only 20 miles nearer. Yingkow, however, has the disadvantage of being frozen four months in the year, from November to March, so that no ships can enter during that period, and it is then useless as a port. The distance from Hulutao to Taonanfu is about 290 miles, but this section of the country abounds in coal mines of excellent quality notably at Peipiao, 55 miles distant, and at Tayaokou, 70 miles. Hsinhiu, near Hsinminfu, has also excellent mines, and no doubt they will eventually be opened by modern methods and will bring much traffic to Hulutao. The development of local traffic when the Taonanfu railway is built with suitable branches will also be considerable, for, no doubt, it will be followed by the settlement of all available parts of the country it passes through and will bring great quantities of cereal and mineral products within reach of shipment by sea via Hulutao. Any railway construction and consequent development of mines or agriculture to the north and west of Hulutao must create enormous traffic for shipment at Hulutao for it is the natural outlet by sea from Manchuria and Inner Mongolia.


HULUTAO.—General View of the Harbor.

As well as being favorably situated as a seaport Hulutao has the advantage of a good natural depth of water giving 30 feet at low tide, where the end berths of the projected breakwater will be situated if the project which has been devised is carried out by the Chinese Government.

The water rises 8 feet to 10 feet at spring tides and it will be easy of access from the sea for shipping at all times. As regards ice conditions it is also favorably situated considering its position in the Gulf of Liaotung, for the ice on the south side never forms all over the bay till late in the season and then only for ten days or so, but not of sufficient thickness safely to support the weight of a man. The strong tidal current and deeper water at Hulutao, together with the considerable rise of tide, seems to bring about a condition which is unfavorable to its freezing very thickly, though abnormal winters might cause a freezing for at most a month. Observations, however, show that it is no unusual condition for perfectly open water to be at Hulutao or the neighborhood when ice is six inches thick at Chinwangtao.

Hulutao has not only all the requisits for making a good harbor, but also is beautifully situated for a summer resort, and although this is of little importance as regards the harbor, yet it is an advantage from the point of view of its value as a property, for no other seaside place in the north of China is so attractive as regards scenery, and it will no doubt become a popular resort when its advantages in this respect are realized. The money that is annually expended by visitors and property owners at seaside resorts amounts to a very considerable sum, which adds to the value of the land and is of great importance to the neighboring villages for many miles around, as is instanced at Peitaiho. One of the advantages of Hulutao would be that the railway goes right down to the sea instead of stopping six or seven miles away as at Shanhaikwan or Peitaiho.

Hulutao is a narrow promontory running out into the sea in a direction roughly speaking from west to east at right angles to the coast line, its western extremity joining the main land and its eastern end projecting two miles further into the sea. It is covered with numerous round hills, the highest being 400 feet in altitude. It takes its name, Gourd Island, from a fancied resemblance to the shape of a gourd—or Hulu.

On the northern side the water is shallow, but sheltered from the strong southerly winds of summer by the hills. On the south side of the promontory the water is deep with a uniform mud bottom. It is exposed, however, to the full force of the summer winds, but is sheltered from the north, the direction of the prevailing winter winds. It is here in the south side of the promontory that the harbor should be located for, with a breakwater to shelter it from the rough winds and seas, large vessels could lie alongside the wharves in perfect calm. On the north side of the promontory where the sea is always calm accommodation could be made for smaller vessels and junks.

With all the advantages which Hulutao presents, and considering the dearth of essentially Chinese ports on the coast of China, it is a matter for great surprise that the Government does not apply itself in earnest to the not difficult or over-expensive task of making Hulutao the chief port in the north. Already much work has been done, but for some inexplicable reason the Government appears to prefer to allow that to go for nought rather than continue it and so secure one excellent harbor of its own from which could be handled the great trade possibilities of the wealthy region for which it should be the outlet.

In August of 1908 a project to create an adequate harbour at Hulutao was seriously considered, the then Governor of the Province instructing Mr. W. R. Hughes, M. Inst. C. E., who was connected with the building of Chinwangtao harbor, to make an examination of the coast from Yingkow to Shanhaikwan with the object of finding, if possible, a suitable place for a harbor for the accommodation of the Manchurian and part of the Mongolian trade. Hulutao was brought to the attention of Mr. Hughes as a likely place, which, among others had been visited by a Customs cruiser in 1906 and a rough chart then made of it, and after an examination of the coast he reported, in September, 1908, that Hulutao appeared to be the most suitable, if not the only fit place for a harbor, both from its natural conditions and its situation as regards the trade of a large part of the province of Fengtien and that of the undeveloped portion of Mongolia between it and Taonanfu.

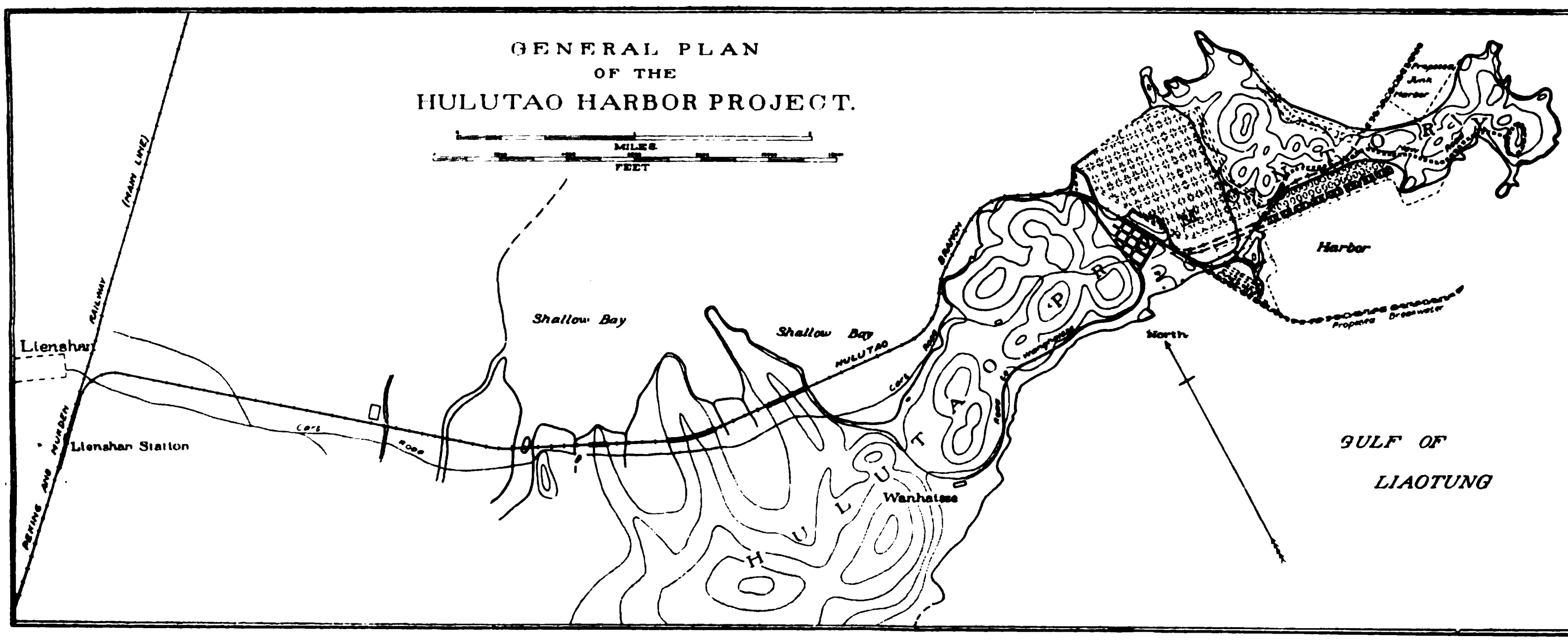
The report was favorably considered by the Governor of the province, who also decided to adopt the project made for the improvement of the port, and an order was given to proceed with the scheme in the early part of October, 1910, but by October 15 of the following year they were suspended on account of the outbreak of the revolution, owing to the lack of funds.

Mr. Hughes advocated (1) that a branch railway should be built to connect Hulutao with Lienshan station on the Peking-Moukden line, as a first step.

2. That a breakwater should be built to provide shelter from the southerly winds, to be so constructed that it would serve also as a wharf for the berthing of ships; to be made vertical on both sides so that in the event of the water freezing at any time inside the harbor ships could still come on the outside; the length to be 5,400 feet long, with a width of 100 feet to provide for the railway running to the extreme end, and to have a depth of 30 feet of water alongside for three berths of ships of 10,000 tons or over, and a total berthing accommodation for 14 ships.

3. The railway line to be continued the whole length of the breakwater with sidings to the different berths, the goods being deposited in godowns on shore, or made up in train loads for their destination as discharged.

4. The erection of a railway station at Hulutao, as well as store houses, engine sheds, and necessary houses and offices for people employed on the work.



5. A building for an hotel to be erected to provide accommodation from the beginning of work for the convenience of travellers, people entering upon businesses at the port, employees of the harbour works, or the convenience of officials visiting the place, for all of whom there might be no other accommodation.

6. The erection of coolie barracks of a permanent nature for the use of workmen and afterwards for cargo coolies working in the harbor.

7. The building of roads connecting Wanghaisze with Hulutao and for access to the promontory.

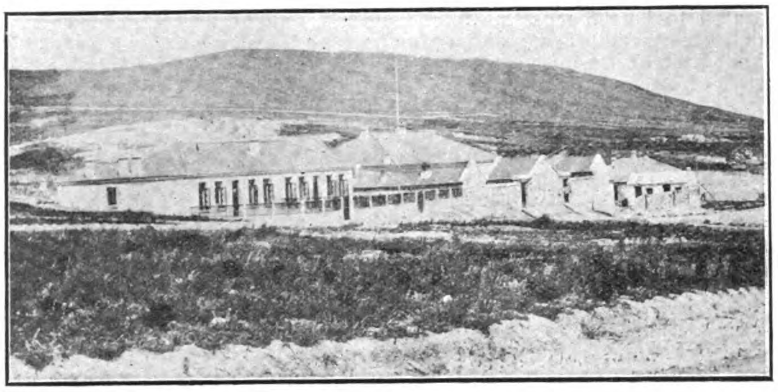
8. The reclamation by an embankment across a mud flat of a large area of land which would admit of streets and roads being laid out upon it and the high land to the west.

The estimate for the breakwater and railway was $4,514,920, and the buildings were sanctioned from time to time as necessity arose, but were not included in that amount.

Actually, only one year's work was carried out, but during that time considerable progress was made. A cart road from the Peking-Moukden railway to Hulutao was repaired at the outset, and the railway from Lienshan to Hulutao was then undertaken. The difficulties of making a railway in any direction to the harbor appeared at first sight to be formidable, owing to the hilly nature of the coast and its deeply indented bays, but a feasible way was finally decided upon by cutting across an arm of the sea for a distance of 4,000 feet and then closely following the coast line.

The railway as now constructed is of standard gauge like the Chinese Government Railways and is laid with 60 lbs. rails.

It leaves Lienshan on the East of the station, starting with an embankment 18 feet high which the Peking-Moukden railway have raised for a station, yard in connection with Hulutao, with space for five lines of sidings and a turntable. It then curves to the southwards with a curve of 1,500 feet radius and runs through flat country with embankments about eight feet high crossing two rivers 110 and 180 feet wide on temporary



HULUTAO.—Employees' Houses.

bridges of Oregon pine timber. The culverts are built of rubble in cement mortar with concrete arches.

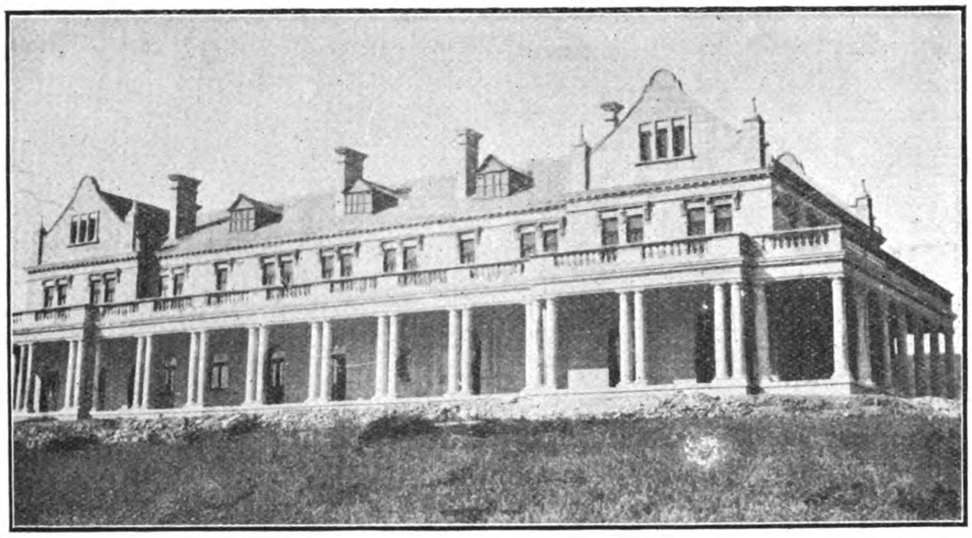
At 20,000 feet from Lienshan there is a cutting 1,200 feet long and 34 feet deep at its deepest part. It is through rock of varying hardness, but most of it of a soft description.

After another 2,200 feet of low embankment there is another rock cutting 1,100 feet in length, by 28 feet deep. After this there is a stone embankment 15 feet high and 4,000 feet long crossing an arm of the sea, and for 6,500 feet more a stone embankment through the edge of the sea curving along the coast, till at 35,300 feet from Lienshan a cutting 40 feet deep and 720 feet long is met with. This is for the most part through extremely hard quartzite which caused much labour to work through.

Beyond this cutting, in the direction of Hulutao there is another stone embankment 900 feet long and 19 feet high and then a final cutting 1,430 feet long and 32 feet deep which is also through hard rock.

Hulutao station site is reached at 7½ miles from Lienshan, where there is a platform some 500 feet long 1,500 feet from the shore end of the breakwater.

The steepest gradient rises 1 foot in 100 for a short distance and this could have been reduced very much but it did not seem worth the expense in view of the steeper gradient on the Peking-Moukden line between Ning-Yuen-Chow and Kao-Chiao. The sharpest curve is 1,000 feet radius.



HULUTAO.—Front View of the Hotel.

The two bridges will sooner or later have to be replaced by steel girders and the ballast requires to be broken up to a smaller size—otherwise the line is complete excepting the station house and yard at Hulutao.

The rolling stock consists of two small engines of 15 tons weight each and one of 30 tons, besides 24 ballast wagons of 15 tons each, and a railway carriage for first and second class passengers. These are only intended for the purposes of construction.

At Hulutao there has also been built a temporary engine house, a store house for machinery, etc., and a small general store besides a small blacksmith's workshop and a cement store.

The sea wall along the shore between the end of the breakwater and the rocky coast line is for reclaiming land required for office buildings and workshops and as a protection to the end of the railway line itself as it approaches the breakwater. It makes a final and secure connection between it and the rocks forming the main land. There being so little level land at Hulutao advantage has been taken of every opportunity for reclamation in laying out the works.

The wall is founded on rock or on concrete blocks sunk eight feet into the beach below low tide. A part of it received some damage from being left unfinished when the works were first suspended, but it has since been made secure and the defects will not be apparent when the work is complete.

These blocks are 30 feet long and contain each of them 100 tons of concrete made with Tangshan Cement. The wall where finished is 18 feet high, and 580 feet of it is in various stages of completion. The upper part is made as a hollow subway 4 feet 6 inches wide and 6 feet high to give convenience for fixing water pipes, electric light wires, etc., which will subsequently be required. Some 180 feet of this subway is made to finished level. Though this wall is at an angle with the general direction of the breakwater it should really be considered as part of it as it is continuous with it and the construction is the same, but is subject to even rougher seas.

The first part of the breakwater now under construction has a length of 930 feet, 350 feet of it being sixteen feet high, 350 feet ten feet high, and the remainder five to six feet high.

It is built over a reef of rocks running outwards from the shore and is composed of concrete blocks of about 100 tons weight each, built in place and keyed together at the ends. In this and the sea wall just considered there is a total length of 1,530 feet and a total number of 117 such blocks which had nearly all to be built at low tide.

The north winds in the spring and early winter make these seasons the most favourable for this part of the work as the summer winds hold up the tide waters, and the rocks are then seldom uncovered, causing rougher seas to prevail. This part of the work has been necessarily slow in comparison with that on shore in buildings, etc., on account of the difficulty in transporting cement from Lienshan before the railway was built. The breakwater requiring a very large quantity of cement as compared with the other work had to wait till the railway was complete, cement for other purposes being brought down on donkeys' backs.

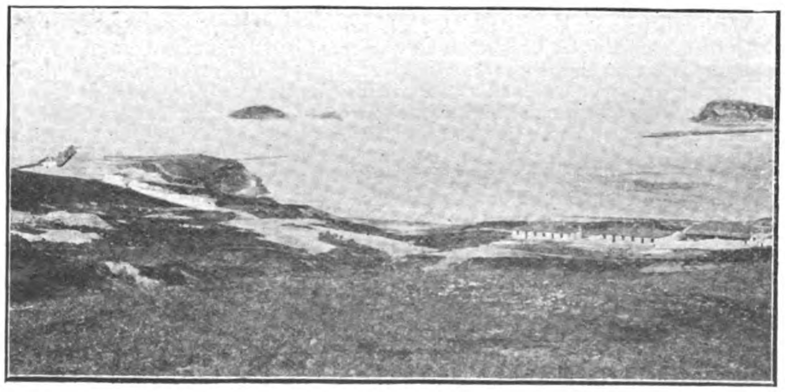
When work was commenced at Hulutao there was no place convenient to the works, on which to put buildings; the level ground was all on high hills or on a mud flat covered by the tide so that it had to be reclaimed from the sea at first by rock excavation and filling in order to get space for a small workshop and cement store near the breakwater. But since then a wider embankment 400 feet wide and 1,100 feet long has been made by filling in, so as to have working space on shore for present purposes, and it will be permanently required for the station yard, sidings, etc.

An embankment was commenced across the mud flat in order to reclaim it from the sea. The embankment when finished will be 2,500 feet long and 15 feet high by ten feet wide on top. 1,248 feet of it had been completed when the work was ordered to be stopped on account of the Revolution.

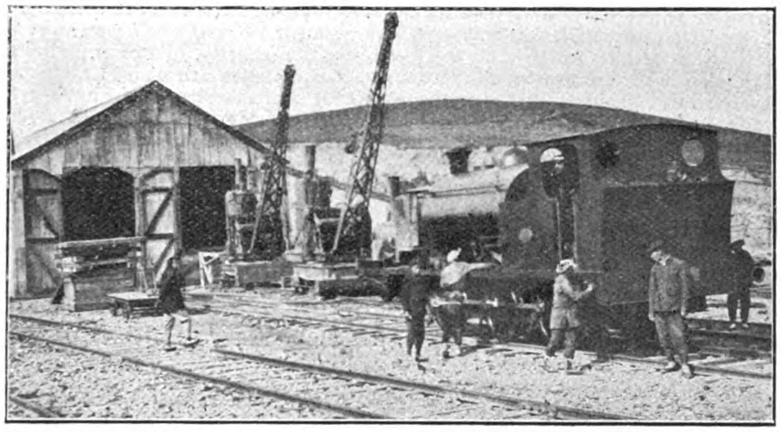
The object of the embankment is to exclude the tide from the mud flat and thus reclaim the land from the sea, when comparatively little filling will be required in order to make it suitable for building on. Approximately 2,000 mow will be reclaimed in this way and rather more than half the embankment required had been made when the work was suspended.

The land surrounding Wanghaisze village and that lying between it and Hulutao having been purchased by the Government for the purposes of Hulutao Harbor it was considered essential to build a road between the two places on account of future development, as well as an alternative route to Lienshan. Without it the land was useless and almost inaccessible, and no use could be made of Wanghaisze village as living room for some of the workmen engaged at Hulutao. A good graded road has therefore been made, 20 feet wide in the centre portion which is finished and can be extended to 40 feet when required. It skirts the base of the hills for a distance of three miles from the coolie quarters at Hulutao to Wanghaisze village. Its picturesque situation will give sites for many private residences in the future and it is in itself an attractive feature of the port.

The land round Wanghaisze is suitable for bean mills or factories, which will, no doubt, be established in due course and a siding about a mile in length would join it to the Hulutao branch railway and so give it all the advantages of the port.



HULUTAO.—Coolies' quarters on left and Employees' Houses on right.

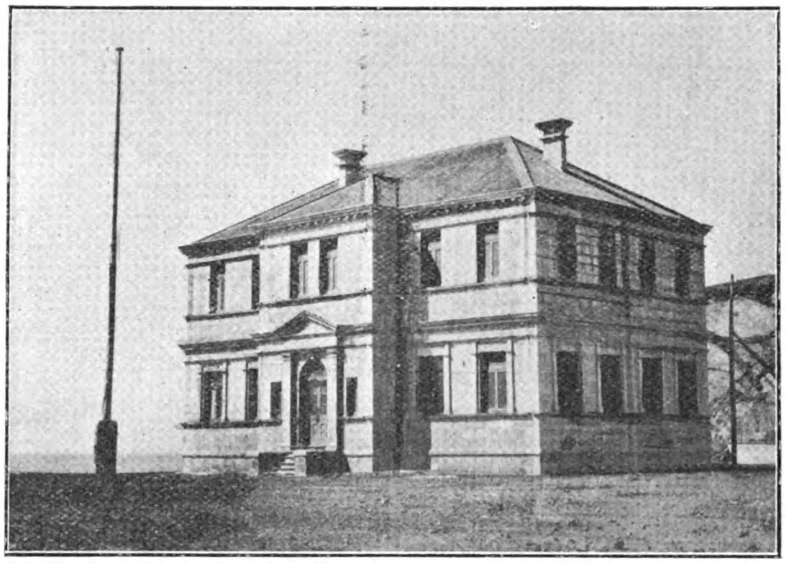


HULUTAO.—Temporary Engine Shed and 30 ton engine.

As well as the road to Wanghaisze a pathway ten feet wide has been made along the face of the hills forming the promontory so as to give access to its whole length of two miles.

At first it was very difficult to walk along the promontory at all owing to the steep sides of the hills, and since tree planting was contemplated a pathway was a necessity. It has given access to many valuable sites for building lots in future.

The subject of water supply even for temporary purposes early forced itself on attention, and wells were sunk in several places, without very satisfactory results. It was soon found necessary to build storage reservoirs for rain water as the wells were insufficient. A large amount of fresh water was required for daily use of the workmen besides what will be required for the various steam engines when the works are fully developed.



HULUTAO.—The Engineer's Office.

The permanent water supply for the town of Hulutao will no doubt have to be brought from the Lienshan River some three miles away, but this will cost a considerable sum of money and take some time to carry out. For present need, therefore, it was decided to build in the first place a small masonry dam across a ravine on the Wanghaisze road for impounding rain water, and, with a suitable filter bed, get a supply for the workshops and offices and a water tank for the engines near to the breakwater. A tank 100 feet square and 20 feet deep has been thus made, but it is necessary to line it with concrete to prevent escape of water through the stratifications of the rocks.

Besides the tank just described a larger reservoir is in construction to the nort-west of Hulutao to give water for general use at that end of the town. The bank is over 30 feet high and 446 feet long, and was nearly completed when the order was received for suspension of all work as explained.

As a large quantity of stone will be required for filling the breakwater and other embankments, it was necessary to prepare in time by making a railway siding along the face of the cliffs which were then only accessible at low tide. Accordingly the face of a small hill has been stripped on two sides, one for 1,000 feet long and 100 feet high, and the other 1,000 feet long and 25 feet high, and railway lines have been laid on each face so that the work of filling will go on quickly when the breakwater is sufficiently advanced to require it.

By the same operation level ground is being made for other parts of the project. As this work of preparation is tedious in itself and the rock could not be obtained without it, there was a distinct advantage to be gained by doing it while the initial stages of the work were in progress.

This has required a great amount of labour, as an embankment 1,500 feet long and 200 feet wide had to be made averaging 13 feet high, and a ravine on the west of it widened from 200 feet to 1,000 feet in order to get material to build it with, and to make space for surrounding buildings. As most of this entailed rock excavation, an idea can be formed of the amount of labour required.

One of the first things done on the work was to build temporary offices and stores, and accommodation for men injured, for the direction of all this work required a great deal of account keeping, drawing and other office work, and room had also to be provided where men injured by accidents could be nursed to recovery. Unfortunately owing to the large number of men employed there were many such cases owing to falling rock and earth, but they received careful treatment.

A store room also had to be built of an entirely temporary description as, till the embankments are completed, there is no convenient site at breakwater level. A small godown to hold 3,000 bags of cement was also built.

A small blacksmiths' shop was built where quarry drills and tools could be made and repaired. This building was made for three gangs of blacksmiths, besides fitters on roof iron work.

The construction of various permanent buildings was also undertaken and in making these, the principle kept in view has been to make them of a thoroughly substantial character so that they may be valuable property for all time and of a good architectural appearance. Owing to the scarcity and high price of bricks and difficulties of transport it was decided to make all buildings of hollow concrete blocks with Tangshan cement and the shingle and sand from the sea shore. This was found to be cheaper than brickwork here, and admitted of handsomer and more durable buildings being erected.

The coolie barracks were built of rubble stone and lime with galvanized iron roofs, and were in three buildings 180 feet long and 30 feet wide with berths in two tiers. They will accommodate 850 men with ease and a good many more by crowding. They are built with a view to disinfecting in case of epidemic. Steam was found to be the most economical for heating as the brick kangs generally in use are by no means cheap to construct on a large scale, require constant renewal, and are costly to heat.

The buildings for Engineer's Office, the Chinese Officials' Office and Residence, and the Engineer's Residence are of two stories of concrete block construction and are of a handsome appearance. They are well built buildings of a permanent character in keeping with those which it is hoped the town will be composed of.

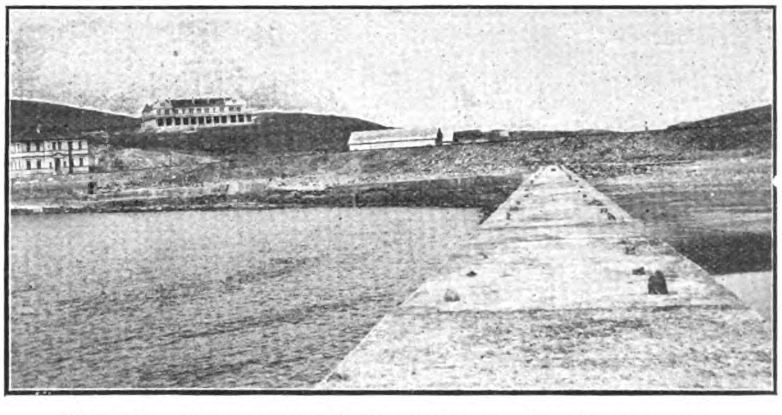
Eight houses for Chinese clerks and others to be employed on the works have been built, six of them in rubble stone and two of concrete blocks and they are model dwellings of their kinds.

A building for a hotel or Rest House has also been erected. It is of concrete block construction, contains 20 bed rooms besides 10 bath rooms and lavatory as well as a large dining room, billiard and bar room, reading room, ladies drawing room and private dining room. It has a verandah on the front and north sides and is fitted throughout with steam heating and properly arranged bath room and water fittings. It remains only to be decorated and furnished, and water laid on from the reservoir, when completed, in order to be fit for occupation. It will be very much required as a stopping place for passing travellers, and a living place for some of the employees of the harbour, and will be indispensable when steamers begin to come to the port. Even as a summer resort for people coming to stay by the sea, it should be profitable to put it in working order at once.

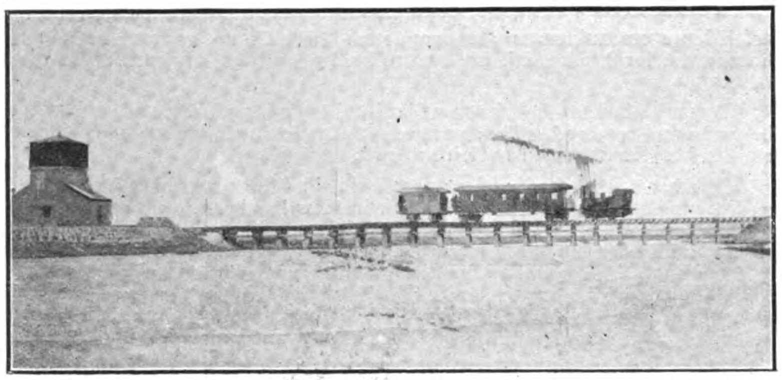
A line of 37 small concrete houses of one room each have been built for use as small shops or for pedlars, etc., as living rooms, in order to be able to keep such places in a sanitary condition and do away as much as possible with the unhealthy huts of mud and kaoliang stalks.

There have also been built of concrete five larger houses to be used as shops. Mr. Chas. Thunder was the architect for all the buildings.

A commencement has been made with the laying out of streets on the high ground to the west of the mud flat. Owing to the hilly and broken nature of the ground and the rock met with close to the surface, it requires much labor to get this into condition for building lots of a town site.



HULUTAO.—View of the Hotel and Engineer's Office from the Breakwater.



HULUTAO.—Water Tank and Railway Bridge.

But with a little more work expended upon it, four very good streets will be available for the purpose.

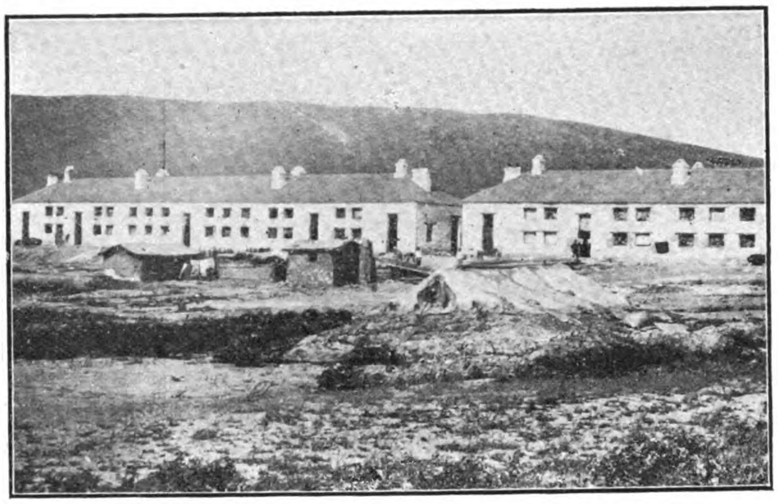
A large quantity of young trees were planted, by the Forestry Department of Moukden, over the slopes along the Wanghaisze Road, on the promontory and along the railway line, but owing to the want of shelter from the winds they are not growing well except in a plantation on the north of the promontory.

Some machinery was bought in Hongkong which had been used in the dockworks there including two steam cranes, two stone breakers and a concrete mixer, besides two portable engines for working them. They are all in good order and stored under cover at Hulutao. Also a locomotive, a workshop engine and boiler, a lathe, planing machine, drilling machine and other small tools were imported from England.

A telegraph line to Lienshan station and a telephone line along the railway is also in working order as both are necessary to the proper working of the railway.

A rest house consisting of six small rooms in a compound has been built at Lienshan station where visitors may stay when waiting for the train from Hulutao. The telephone is also connected with it.

At Hulutao, near the Chinese Officials' house, police barracks have been built capable of accommodating 40 soldiers or police, with quarters for their officers and stabling for six horses.



HULUTAO.—Coolies' Quarters.

The execution of the works enumerated above naturally necessitated a great deal of temporary work which it would be tedious to mention. Suffice it is to say that when the works were commenced here, a distance of ten miles by road from the railway station, there were no resources of any kind, not even fresh water, or huts that coolies could live in, and that in the year's work now under review the railway was made and that through somewhat difficult country, a good commencement was made to the breakwater, many permanent buildings were made that would be no discredit to any town, much embankment and reclamation work was done out of hard rock, quarries have been opened and much other work done which will greatly facilitate the completion of all the rest of the scheme. In a word, the preliminaries of the work of a great part have been done under difficulties, and all is of a nature that is good, solid, and endurable.

So far as it was possible to do so the heaviest part of the work was done by small contracts with rock contractors, etc., but a good deal of day labour was also unavoidable.

Accounts were rendered monthly, and vouchers and receipts obtained for every expenditure. The total sum expended at Hulutao on the works, up to the present, amounts to $1,028,850.90, but this does not take into consideration the purchase of land or expenses defrayed direct by the Moukden authorities.

It was a misfortune that the works had to be suspended when they were going on so satisfactorily, for, the preliminaries having been finished, the construction of the breakwater would have gone on rapidly to the completion of the first steamer berth.

WATERWORKS IMPROVEMENT IN JAPAN

The laying of private waterworks was permitted by the Government for the first time in 1911, says a Tokyo paper, and continues:—The new field opened for private enterprises, however, has been unexploited since. Now it is reported that in various localities waterworks are being laid by private companies. In Shinagawa, a suburban town, work was started last year by the town, and will be completed shortly. In Shinjuku and Oji, also in the suburbs of the city, private companies are being organized by the local business men for the laying of waterworks, each having a capital of 2,500,000 *yen*. The Government is reported to have also received petitions from Osaka and Odawara for the construction of waterworks. In Osaka a company with a capital of 1,000,000 *yen* has already been organized for the purpose of supplying water to the city, while in Odawara a company is also being formed by local business men with a capital of 60,000 *yen*. The authorities in the Home Office are reported to have approved the schemes and decided to grant charters to these companies.

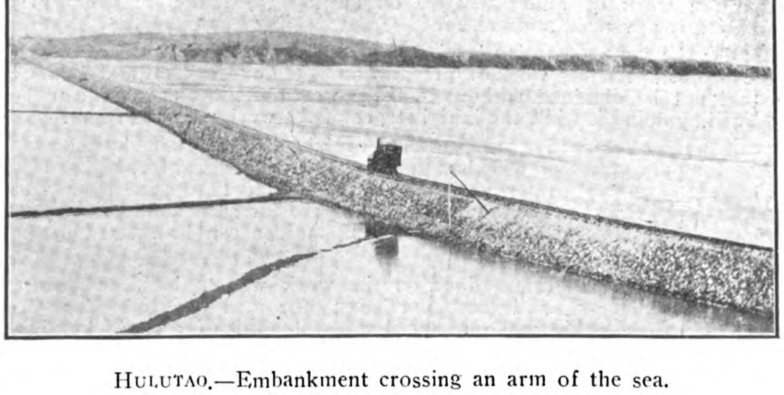
SINO-JAPANESE INDUSTRIAL DEVELOPMENT COMPANY

It was announced in Peking on July 4 that the new Sino-Japanese Industrial Development Co. was registered at the Ministry of Commerce on June 22. It is called the Chungji Shihyen Yuhsien Kungtse and has a capital of $5,000,000, equally subscribed by Chinese and Japanese in fifty thousand $100 shares. The head office of the Company is in Tokyo, but the general business bureau will be in Peking, with a branch office in Shanghai. There will be one Director-General and one Vice-Director General, who will be assisted by two Managing Directors.

No shares will be permitted to be sold to people of other nationalities than Chinese and Japanese. The Company will undertake to investigate industrial enterprises and the introduction of capital with which to work them, to finance industrial affairs directly and indirectly, to issue loans and attend to all other financial business. It disclaim any connection with, or responsibility for the former Sino-Japanese Trust arranged by Dr. Sun Yat-sen.

According to Chinese reports a high Chinese official will become Director-General of the Company, whilst Baron Shibusawa will be Vice-Director-General. The latter will depute a Japanese member of the Board to act for him. The Shanghai office will be managed by Chow Ching-chien, with Japanese associates.

The Japanese Legation, however, denied that Baron Shibusawa is a Vice-President of the new Sino-Japanese Industrial Development Co., but states that Mr. Karachi has accepted that post.



HULUTAO.—Embankment crossing an arm of the sea.

RAILWAY DEVELOPMENT IN MID CHINA

THE QUESTION OF EXTENDING THE TAO-CHING RAILWAY.

In the last issue of the FAR EASTERN REVIEW reference was made to the decision which has been arrived at by the Chinese Government to, among other things, connect the Tientsin-Pukow (Tsin-Pu) railway with the Peking-Hankow (Kin-Han) railway, the capital to be employed to be derived from German financial sources.

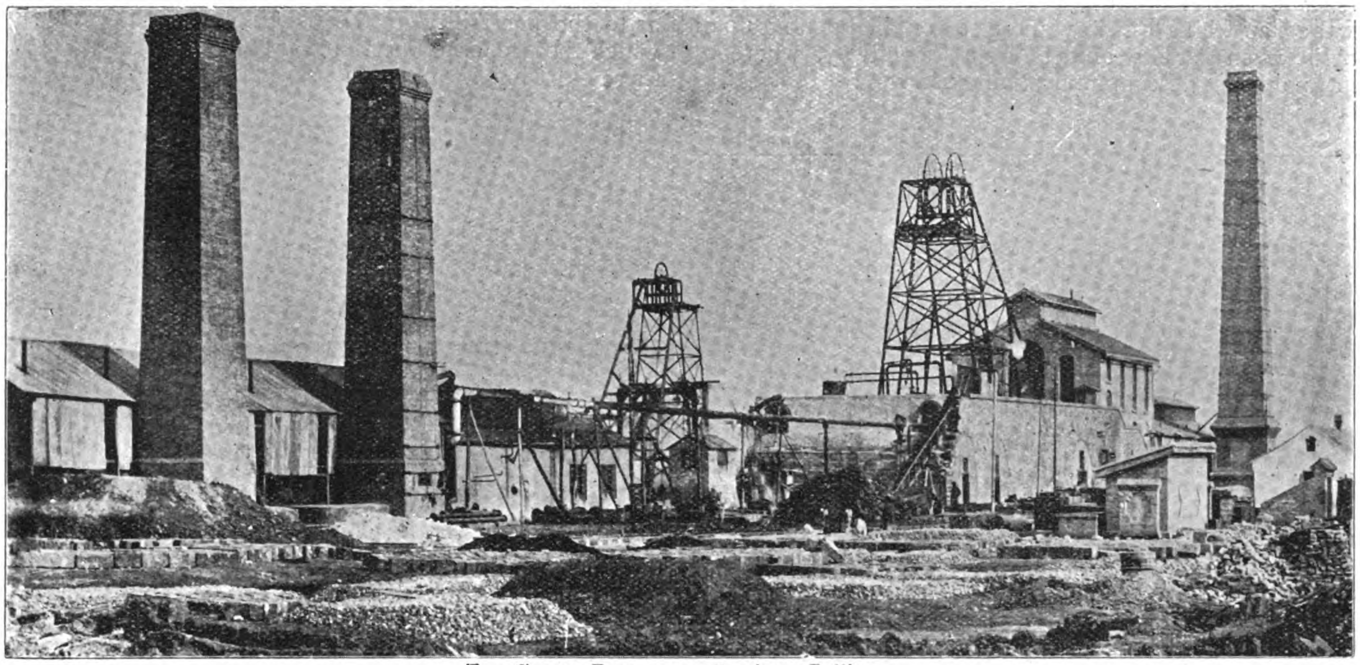
In the agreement which has been come to between the Chinese Government and Germany in this connection it has been specified that the line shall strike off from the Tsin-Pu railway at some point on the north of the great bridge crossing the Yellow River, near Tsinan-fu, the capital of Shantung province, but the route westwards to the Kin-Han railway has been left to be decided by a survey. There are two points of junction with the Kin-Han line under consideration, one near Changteh-ho—distinguished as the provincial home of President Yuan Shih-kai,—and the other the city of Taokow, where terminates the railway connected with the Peking Syndicate mines. This railway joins Taokow with Chinghua, crossing the Kin-Han railway at Hsinghsiahsien, and was originally built with the restriction that it should carry coal and cargo but no passengers, a hampering condition which the Chinese Government ultimately deemed it wise to remove.

The fact that the Government has now entered into an agreement to connect up the Shantung railway system with that to the west, combined with the fact that the Tao-Ching railway exists, and labors under certain disadvantages for want of further extension, calls attention to the necessity of China pursuing a policy calculated to co-ordinate her existing railway systems and bind them by judicious connections into as complete and effective an organ of communication and development as possible.

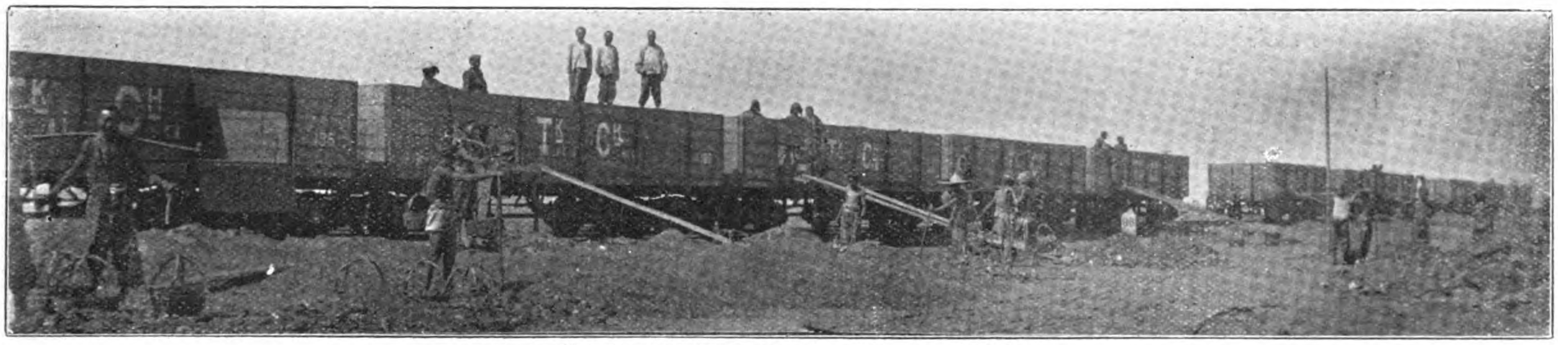
It is permissable therefore to examine the situation in the region affected by the decision of the Government to provide an outlet to the sea at Tsingtao for traffic from the northern part of Honan, with particular reference for the call that exists to connect the Tao-Ching railway with others which will enable it to become a generally useful and paying concern.

In the map which we publish in connection with this article the relation of the line with other systems will be seen at a glance, and furthermore it will be observed that the logical course for the Government to follow will be to utilise it as a means of reaching both the Tsin-pu railway on the east and the proposed line from Tatung through Taiyuanfu to Sianfu in Shansi province, on the west.

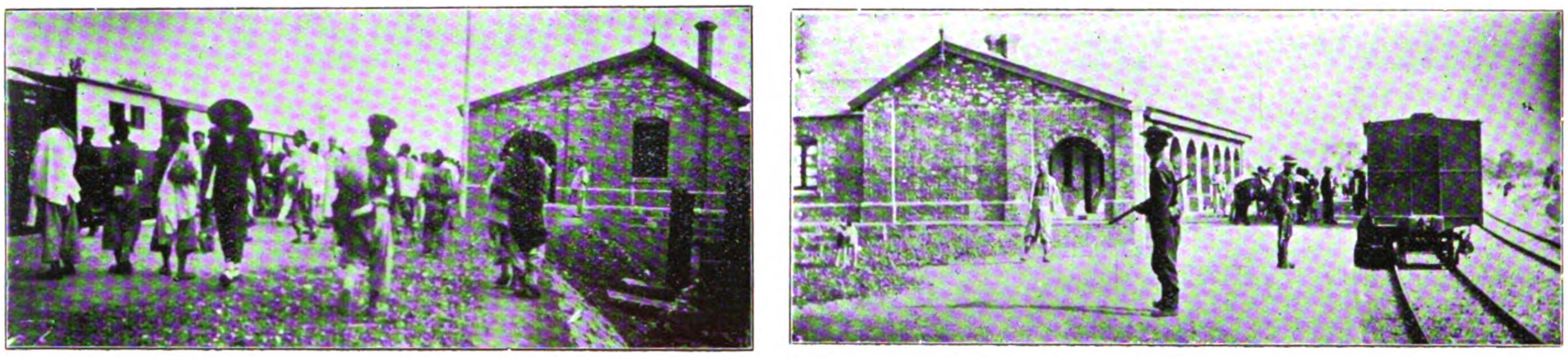
The question of the extension of the Tao-Ching railway is not a new one. It has been deemed necessary from the time the existing line was completed, and surveys have been made to ascertain the feasibility and advisability of extending both east and west. The results of those surveys clearly indicate that it is



TAO-CHING RAILWAY.—Jamisen Colliery.



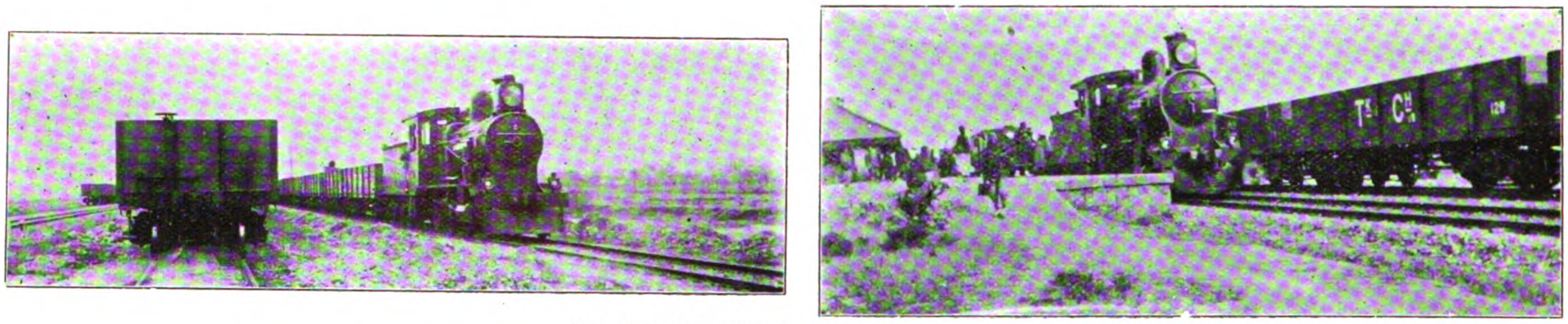
TAO-CHING RAILWAY.—Loading a Coal Train.



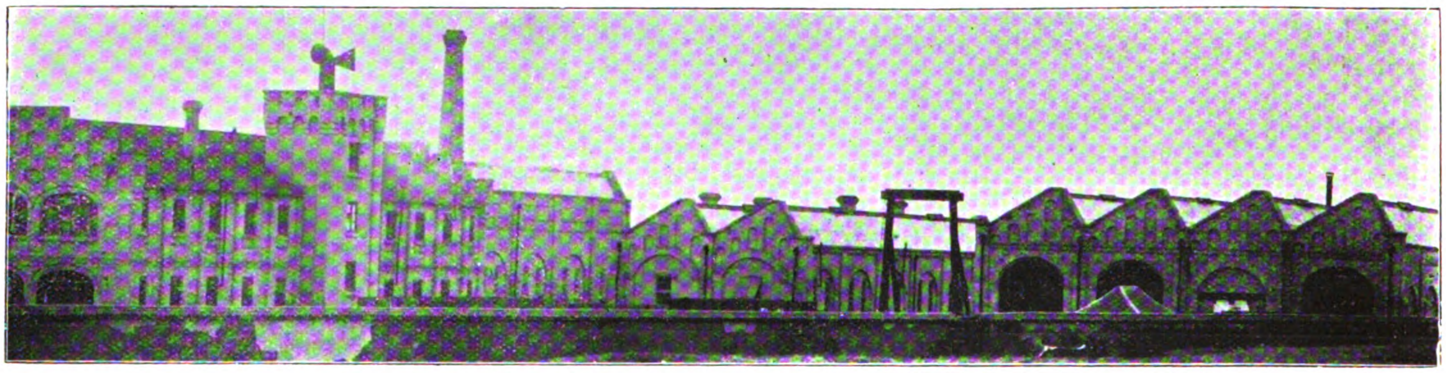
TAO-CHING RAILWAY.—China-Hua Station.

highly desirable both from the point of view of the ultimate success of the Tao-Ching Railway and also for the opening up of the country between Taokow and the Tsin-Pu railway, where, at the moment, no means of communication exist.

It has also been ascertained that an extension from Taokow through such important centres as Kaichow, Tungchangfu, and various other busy Chinese towns and cities, to, say, Tsiho, a point immediately north of the Yellow River, on the Tsin-Pu railway, would be, in the first place, desirable from the point of view of construction. The country is very flat, and the absence of large waterways places it in the favourable position of having a minimum number of bridges to construct.



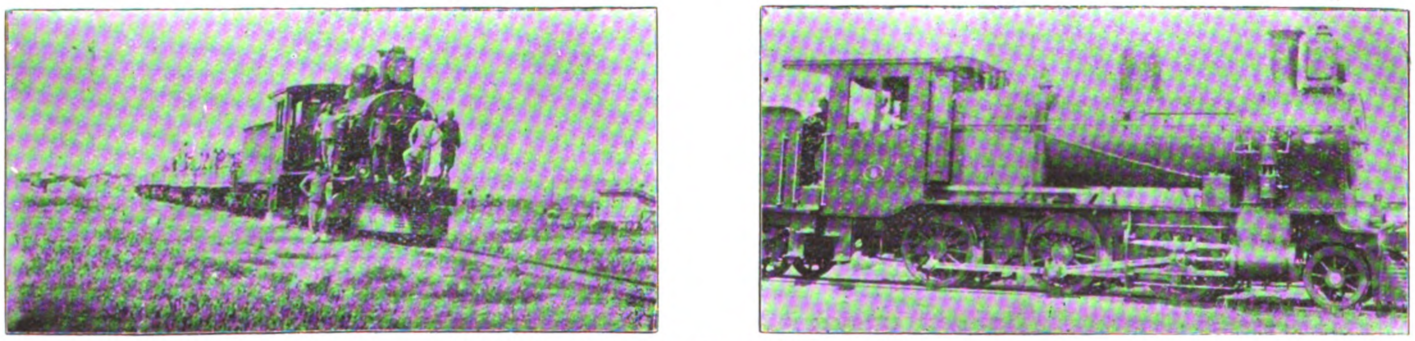
TAO-CHING RAILWAY.—Coal Trains.



TAO-CHING RAILWAY.—Car and Locomotive Shops.

While the survey was being made inquiries were instituted as to the possibility of the opening up of the country through which the proposed line would travel, and it was ascertained that there exist important centres for cloth, cotton, wool, hides, wheat, and peanuts, and also large quantities of straw-braid. It was also ascertained that at Tungchangfu the product from such important centres as Kuanchang, Nanli, Chaochang, Shinhsien, and Tangyi is collected before being sent to Tsingtao for export.

Under existing conditions the transport facilities from Tungchangfu are limited to the very small waterways between that place and the Yellow River; the Grand Canal having been closed to navigation for many years, and this fact alone must of



TAO-CHING RAILWAY.—Types of Locomotives.

necessity retard the trade to a considerable extent. The total trade per annum in straw-braid alone amounts to Tls. 1,000,000. This information was furnished to the Engineer of the Tao-Ching railway by the Chamber of Commerce at Tungchangfu, and he was assured that should the line be extended to the Tsin-Pu railway this figure could be very considerably increased. The inhabitants in the districts concerned are, too, naturally anxious for this railway to be built, though the officials at the moment are preparing estimates and devising means to dredge the Grand Canal to Lintsingchow as a remedy for the falling off of trade in these important centres.

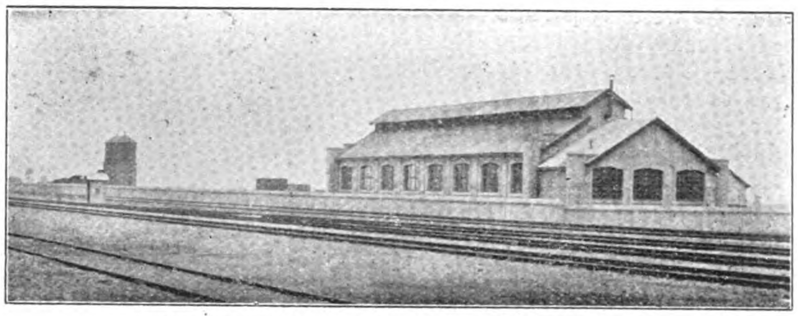
In addition to the revenue which such an extension would derive from the districts it actually touches, there would be a proportion of the existing traffic on the Tao-Ching railway which would traverse such an extension, and further the coal mines in the district of Weichingfu would supply a considerable amount of additional traffic. From detailed inquiries made it is estimated that from Taokow onwards markets could be found for an additional 500,000 tons of coal per annum. This in itself would provide very satisfactory returns for the extension alone and would more than double the coal traffic on the existing railway. Such returns are in no way problematical. The amount of oal transported on the present Tao-Ching railway has risen from 65,000 tons in 1905, to a figure in the neighbourhood of 500,000 tons in 1913, while other goods have increased from 22,000 tons in 1905 to 43,000 tons in 1913.

The passenger traffic also is of importance. In 1905 the number of passengers carried amounted to 48,900 while in 1913 they numbered 221,000. Naturally the connecting of two main trunk lines such as the Peking-Hankow (Kin-Han) to the Tsin-Pu railway would have a very important bearing on the passenger traffic receipts. In extending the line, too, the proportion of administrative expenses per mile would be considerably reduced.

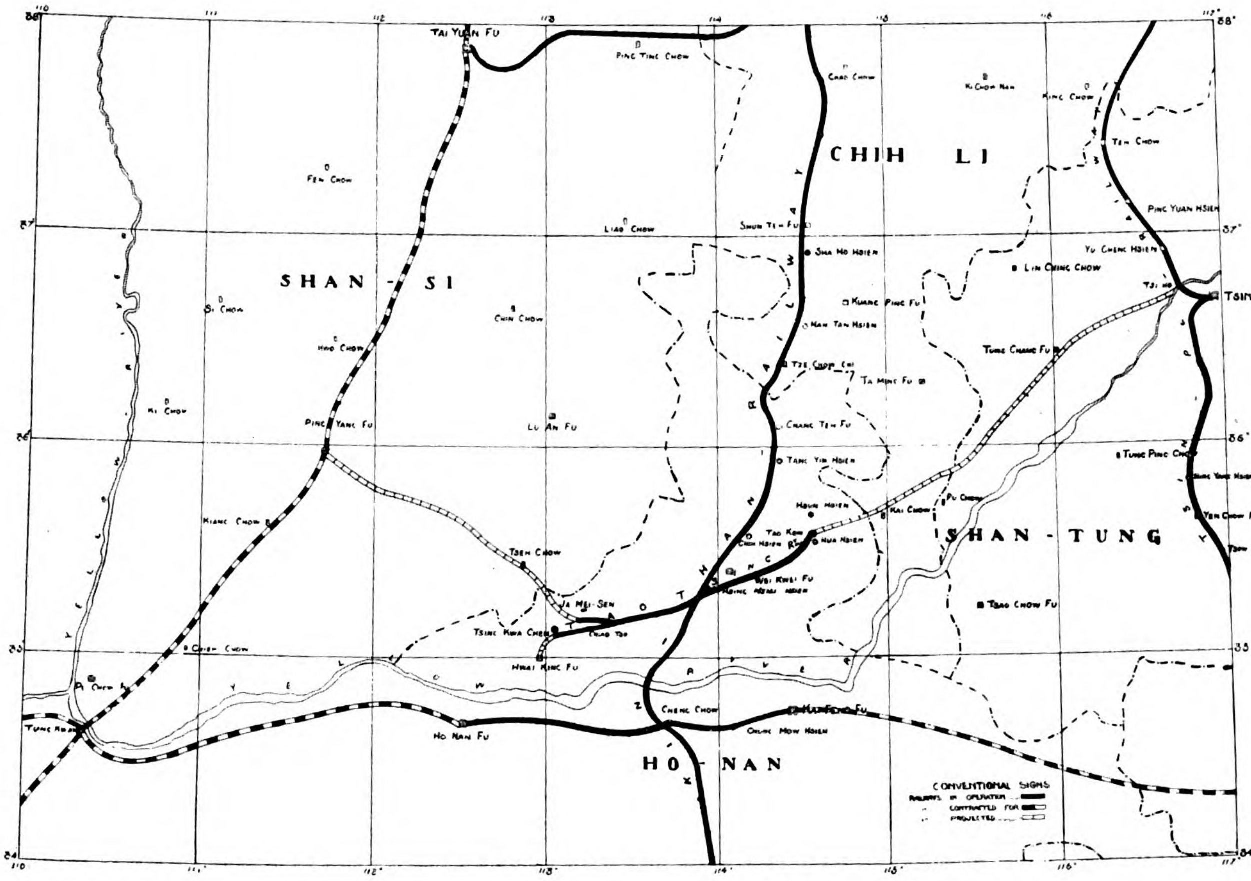
It is interesting to note that in 1905 the total receipts of the existing Tao-Ching railway amounted to Tls. 83,500, while the expenditure amounted to Tls. 75,000; in 1913 the receipts reached Tls. 370,000, the running expenses amounting to Tls. 277,000. Therefore, should the suggested extension be carried out it may safely be assumed that the immediate receipts would be somewhere in the neighbourhood of Tls. 750,000 per annum, with running expenses not exceeding Tls. 400,000. These results coupled with the traffic which is certain to be derived from the two main trunk lines mentioned should place the Tao-Ching railway on a paying basis within a very short time.

It has from time to time been suggested that the Tao-Ching railway should be extended in a westerly direction into Shansi,

TAO-CHING RAILWAY.—Sin-Siang-Sien Station.



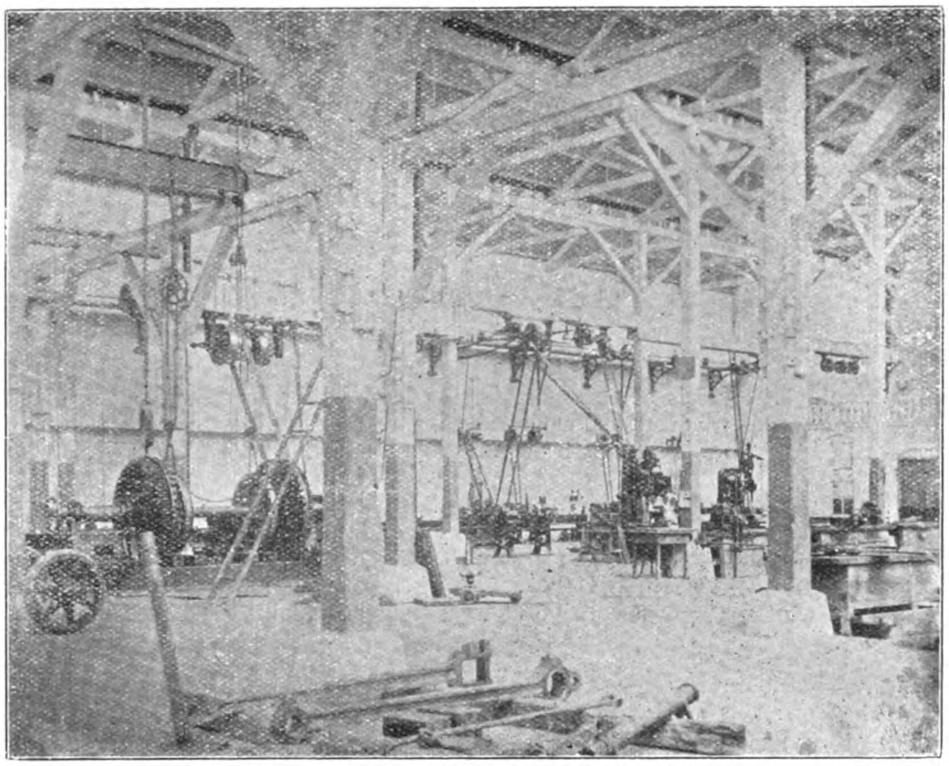
TAO-CHING RAILWAY.—Shop and Water Tank.



Sketch Map showing the proposed extensions of the Tao-Ching Railway.

and surveys have been made with this object. In view of the proposed railway between Tatung and Chengtu crossing the Yellow River at Tungkwan it would appear to offer an excellent opportunity to extend the Tao-Ching Railway to link with this new line. The proposed railway from Tatung, passing through Shansi, would be feeding the Tao-Ching railway with a considerable amount of traffic from the mines in that Province, and this, coupled with the fact that the westerly portion of Honan, which the Tao-Ching railway passes through, is one large coal field, producing something like 1,000,000 tons a year, would undoubtedly soon place the Tao-Ching railway on a paying basis. It is certainly a fact that the limited sphere of the Tao-Ching railway seriously hampers the production of coal in the Honan field, and the above figures could be more than doubled with the extension of the railway as suggested.

The Tao-Ching railway is of standard gauge and was built by Messrs. Pearson & Son for the Peking Syndicate, Limited. A concession was obtained in 1898 to build the railway, and work was commenced in 1900. The Boxer outbreak caused a suspension of construction and a resumption was not made until 1902. On July 24, 1904, the line was opened for traffic, the distance being 90.39 miles; since that time it has been extended to a length of 93.21 miles. There is also a branch line of 1.11 miles in length. The cost of construction is set down at £614,600.



TAO-CHING RAILWAY.—Interior of Machine Shops.

The railway was built expressly for the purpose of carrying coal from the mines of the Peking Syndicate at Jamisen to the Hwai river at Taokow. No provision was made at the time of opening for the carrying of passengers, but as time went on the restriction against the line in this respect was withdrawn and passengers gradually availed themselves of this means of transport, covered goods wagons being used for the purpose of carrying third-class passengers, while two first and second-class composite carriages were purchased from the Peking-Mukden line. Two years ago a new train was built at the Works connected with the line, the passenger carriages having been made up from under frames of goods covered wagon tops.

TAO-CHING RAILWAY.—Locomotive Shops.

The traffic consists of local passengers travelling from station to station, principally third class, and goods consisting of salt, bamboo, ginger, tobacco, iron, kerosone and general mixed merchandise and coal. One passenger train runs each way daily, and one coal and goods train daily for the full length of the line, while two coal trains travel half the length of the line per day. There are no long or fast runs the passenger trains being timed at 25 miles and the goods and coal trains at 18 miles per hour.

The line is through country which is perfectly flat, with no tunnels, and only one bridge of any size, viz., eleven 20ft. and four 30ft. spans. Altogether there are 176 other small bridges and culverts, the total length of waterway being 3,197.5 ft., or 34.2 ft. per mile. The rails used are 75 lbs. per yard and are flat bottomed. They are fastened with spikes to Japanese sleepers.

The total receipts for 1912 were $556,437, the expenditure being $457,112, (excluding interest amounting to $401,000), passengers contributing $101,772 and freight $454,665. The number of passengers carried totalled 246,156, and the freight amounted to 513,875 tons.

The foreign staff on the railway consists of the Manager and Traffic Superintendent, the Locomotive Superintendent, the Engineer of Way and Works, and the Accountant and Storekeeper. The native staff consists of 1,080 men, including Government representation of about 10 men.

The rolling stock consists of ten locomotives, 161 wagons and 24 passenger and other vans.

Locomotives—Six Tender (goods) 2-6-0 coupled bogies; cylinders 18in. diameter × 24in. stroke. Wheel base—rigid, 14ft.; total 22ft. Weight 95 tons.

Two tank (shunting) 0-6-0; 40 tons; cylinder 16in. diameter × 22in. stroke. Wheel base 12ft. 6in.

One tender (passenger) 4-4-2; 120 tons.

One tank small tender (shunting) 0-6-0; 45 tons.

Coaching vehicles—2 1st Class Cars; 2 1st and 2nd Composites; 2 Second class; 4 Brake vans; 1 Luggage Van (and Postal); 9 3rd class; 2 3rd and Brake Vans Composites; 5 Pony Cars; 1 Inspection Car; 1 Brake down Van; 3 Flat wagons; 8 Low sides; 18 12 tons high side coal trucks; 125 30 tons high side coal trucks; 6 Covered goods 30 tons; All 4 wheel bogies except 12 tons and Brake down van, they being 4 wheels (2 Axles).

EXPRESS SERVICE SHANGHAI-PEKING VIA PUKOW

Messrs. Thos. Cook and Son inform us that for the convenience of through passengers to Peking travelling by the Pukow-Tientsin Express arriving at Tientsin Central Station at 10.35 p.m. on Tuesdays, the following arrangement came into force on June 23:—On arrival of the up Express from Pukow at Tientsin Central Station first class through passengers for Peking, if they choose to do so, may stay over night on board the car in the same berth occupied by them during the journey on payment of a charge of 2.00; but they have to leave by all means not later than 8 o'clock the next morning.

MR. YANG TCHENG

The recent conclusion of an agreement whereby the area policed and controlled by the authorities of the French Concession at Shanghai has been extended gives ground for hope that the question of the extension of the International Settlement will also shortly be solved. The negotiations on the Chinese side are in the hands of Mr. Yang Tcheng, Special Envoy for Foreign Affairs, whose photograph we reproduce on this page. Mr. Yang Tcheng took up his duties in Shanghai early in November and at once established himself in the good graces of both the foreign and Chinese Communities. He brought to his local labors ripe diplomatic experience obtained elsewhere, and this coupled with broad tolerance and sympathetic understanding has enabled him to emerge successfully from the delicate negotiations in which he has constantly taken part since his arrival.

Mr. Yang Tcheng spent six years in Japan when he was very young and later studied for a similar period at the Tungwen College at Canton. Thence he went to Germany as a student and finished his education at the Leipsic and Berlin Universities. While in Germany he devoted himself principally to studying law and military tactics. Returning to China in 1900, just before the Boxer Outbreak, he became Professor of German and of Law at the Peking University under Dr. Martin. A period was put to his usefulness in this sphere by the troubles and he went to Shantung, where he became Secretary in the yamên of Yuan Shih-kai who was then Governor.

Mr. Yang Tcheng, Special Envoy for Foreign Affairs at Shanghai.

When Prince Chun (afterwards the Prince Regent) went on his mission to Germany, he was accompanied by Yin Chang and the latter's position of Secretary to Prince Ching and Li Hung-chang was taken by Mr. Yang Tcheng. Subsequently he returned to Shantung, was given the rank of Taotai and filled the position among others of Director of Foreign Affairs, Director of Mines, and Director of Railways. Late he was made Chinese Minister to Vienna where he served for two years. He was then transferred to the post of Minister at The Hague and Berlin. He returned to China on account of family mourning and lived privately in Canton for some time. When Viceroy Chang Jen-chun went to Nanking Mr. Yang Tcheng accompanied him as Chief Adviser on Foreign Affairs, Commerce and Military Administration. After the Revolution Mr. Yang Tcheng went to Tsinanfu where he became Chief Adviser to the Governor with the title of President of Foreign Affairs. Later he filled the position of Commissioner for Home Affairs in Shantung.

The Government's appreciation of Mr. Yang Tcheng's services has been shown by the bestowal of the second class order of the Chiaho.

FAR EASTERN RAILWAYS

CHINA

Shanghai-Nanking Railway.—The following figures of traffic returns (approximately) for the week ended June 27 are issued by the Shanghai-Nanking Railway:—

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	44,892	10,555	55,447
1913....	42,411	13,677	56,088
Increase.	2,481		—
Decrease	—	3,122	641

For fifty-two weeks.

Year.	Passengers.	Goods & Sundries	Total
	$	$	$
1914....	2,525,206	553,041	3,078,247
1913....	2,264,743	514,646	2,779,389
Increase.	260,643	38,395	298,858
Decrease	—	—	—

Week ended July 4, (the first week in the 1914-15 fiscal year).

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	44,651	11,750	56,401
1913....	43,766	12,319	56,085
Increase.	885	—	316
Decrease	—	569	—

Week ended July 11.

Year.	Passengers.	Goods & Sundries	Total for the week.
	$	$	$
1914	42,705	12,757	55,462
1913	41,753	11,024	52,777
Increase.	952	1,733	2,685
Decrease	—	—	—

For eleven days.

Year.	Passengers.	Goods & Sundries	Total for the week.
	$	$	$
1914	66,848	19,102	85,950
1913	67,012	18,172	85,184
Increase.	—	930	766
Decrease	164	—	—

Week ended July 18.

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	42,205	11,723	53,928
1913....	54,840	10,955	65,795
Increase.	—	768	—
Decrease	12,635	—	11,867

For three weeks.

Year.	Passengers.	Goods & Sundries.	Total.
	$	$	$
1914....	109,053	30,825	139,878
1913....	127,854	30,778	158,632
Increase.	—	048	—
Decrease	18,801	—	18,754

Chefoo-Weihsien Line.—What is described as one of the largest and most representative meetings known in Chefoo was held on April 21st to further the agitation for the speedy commencement of the Chefoo-Weihsien railway. Mr. J. Howard Stooke, chairman of the Chamber of Commerce, who presided, said that the value of the breakwater, which might now be regarded as assured, would be much lessened were the connection of Chefoo with its hinterland not secured. The breakwater and the railway were two parts of one scheme. The Chairman announced that the Chinese Community was memorializing the Government about the railway and it was suggested that the foreign community should memorialize the Diplomatic Corps at Peking. The meeting unanimously approved of this being done.

Canton-Hankow Railway.—The Canton Correspondent of the *N.-C. Daily News* gives the following account of the progress made with the construction of this line:—

The Kwangtung part is to be constructed from Canton to P'ingshek on the borders of Hunan province. During the early months of the year it was opened as far as K'onghau but it is promised that shortly it will be opened as far as Ushek. There will then be something less than twenty English miles beyond this before the line reaches the district city of Shiuchow,

Meanwhile, this part of the line is delayed only because there are one or two small tunnels to be bored through; but navvies are at work on them, and it is believed that by the end of the year, the trains will be running all the way from Canton to this district city,—about three hundred miles. Whilst these tunnels are being bored, stations have been erected, and also ways opened between the several stations and the river, as well as between the stations and the towns. It is unfortunate that so frequently the stations are planted so far from the cities, but it must be assumed that this could not be helped.

The line between Shiuchow and Lokch'eung is partially laid, according to this report, but there are at least six bridges to be constructed, and these will take some little time to erect. In most cases the foundations of these bridges have been laid, and so the most difficult and important part of the bridge building has been accomplished. It is believed that at no distant date, the line will be opened as far as Lokch'eung. Beyond this, the line has been surveyed, even as far as Pingshek. Until there is some hope of progress on the Hunan side, so that the two provinces may be joined, there is not much need to be specially disturbed by dilatoriness on this section. The country is very sparsely populated, and for some time the traffic, even in passengers, must be small, though it seems remarkable where passengers come from, for as soon as any bit of line is opened here in the south, people crowd forward.

Apparently from the outlook of this carefully prepared report it is believed that there will be considerable traffic receipts from the railway, though how it will be able to compete, except for trans-provincial goods, one finds it difficult to discover. Scores of miles of the line are laid on or near the river's bank, and the native boats glide down the river, and carry much stuff, with the loss of little time, and the expenditure of no coals and little labour.

On the other hand, where there is trans-provincial transference of goods, either on one side of the mountain that divides the two provinces, or the other, there is the flow of the river to contend against, and here, without doubt, the train will have the pull over river traffic, for in addition to poling against the stream, there must be a re-shipping of cargo, which coolies have to carry across the mountains. Anyway the promoters of the line seem quite satisfied, and by this time they should have enough data behind them to warrant them in forming conclusions as to future prospects. Many will be glad when it will be possible to travel from Hongkong to Shiuchow in one day.

The Chekiang Railway.—It is reported that a satisfactory arrangement for the handing over of the Chekiang Railway to the Government has been arrived at. The price to be paid to the shareholders of the company has not been officially stated, but is said to be $17,000,000.

Kirin-Changchun Railway.—The traffic receipts of the Kirin-Changchun Railway for March decreased to S. Y.67,788. The two terminal stations at Toutaokon (the junction between the S. M. and the K.-C. lines) and Kirin contributed the largest shares, giving S. Y.26,651 and S. Y.24,738 respectively. The Changchun Station followed with S. Y5,307. The receipts of the other stations were less than S. Y.2,000.

Pukow-Singyang Line.—It was the original intention to start construction of this line from Wu-i and Singyang simultaneously, but owing to the disturbed conditions in Honan this could not be done. The Director General, Mr. Shen Yun-pei has now given instructions that work should be started on the Singyang section as soon as possible.

JAPAN

Fuel Oil For Japanese Railways.—A contract may shortly be concluded between the Imperial Railway Board and the Japan Petroleum Company, the owners of the wonderful Akita well, for the supply of oil fuel. Since it was approached by the company with the proposal, shortly after the great capacity of the well was discovered, the Board has been considering the relative advantages of oil and coal fuel. These investigations appear to have favourably impressed the authorities, as it is currently reported that the negotiations have made much headway. It is said that the company is confident of being able to supply at least sixty or seventy thousand koku a year, at the rate of 1.80 *yen* per koku This price is more than one *yen* below the old contract price.

CHOSEN (KOREA)

Railways in Chosen.—In a report by the British Consul-General at Seoul it is stated that during 1913 the Korean railways carried a large increase of traffic. The Seoul-Gensan line is expected to be finished towards the end of this year. No light railway was constructed in 1913. Starting from the financial year 1914-15, the third railway programme is to be undertaken. This includes the reconstruction of the Seoul-Fusan line, which was originally built in a hurry owing to the exigencies of the time, and which, though since then to some extent improved, requires reduction in gradients, etc. A continuation of the Seoul-Gensan line from Gensan to Yong-heung, 34 miles in length, passing through Munchon and Kowon, is also to be laid down later, and the extension is expected to be carried on to Hamheung. Japan seems to be keen on Korea's development.

MONGOLIA

Verkne Udinsk-Kiakhta Line.—A Berlin telegram dated July 3 states that the Russian Imperial Council has granted the means for building the railway from Verkne Udinsk to Kiakhta.

THE PHILIPPINES

Extension of Existing Lines.—Railway construction in the Philippines is being continued only in line with the plans adopted about a year ago and new enterprises are not being undertaken. Within the scope of plans being realized, the chief interest centers in the approaching completion of the Manila Railway to Baguio, the mountain capital. On this branch the grading has been practically finished and the track has been laid up to the foot of the first rack grade, where the cog-road section begins. This latter section climbs a 14 per cent. grade for 10 miles through magnificent mountain scenery. On the entire branch there are to be 5 tunnels approximating a total length of 0.932 mile, of which the longest is 0.262 mile. One tunnel is practically completed, the headings having been driven through on three and a start made on the fifth. All the material for the cog road is now on the ground and work started about April 1. It is expected that the road will be ready for traffic in 1916.

Other branches of this line also show progress. The branch line from San Francisco to Arayat is completed to Santa Ana and will be finished by the end of April. The branch from Paniqne to Rosales, San Quintin, and Tayug is complete to about 8 miles from San Quintin. North of Aringay the track extension is delayed at the Naguilian River, 8 miles south of San Fernando, where a bridge of 11 spans, 150 feet each in length, is being built. It will be the largest bridge in the Philippines. South of Manila, running in a northeasterly direction from Lucena toward Laguimanoc, 12.427 miles of track have been laid. Between Laguimanoc and Siasi there are 5,000 at work grading.

At Albay large forces of men are at work in both direction on the Albay-Nueva Caceres division. From Albay and Legaspi north to Tabaco the track is laid to Bacacay. Track has been laid to Ligao, a distance of 24.85 miles; Iriga will be reached in about a year. The line reaches a rich hemp country. The company has altogether about 10,000 men at work on the various extensions now in course of construction. The company is placing in service on its main line a train de luxe of the most advanced pattern constructed in its shops near Manila.

Work on the lines of the Philippine Railway Co., the second principal system in the islands, has not been pushed very rapidly in the past few months and at present is practically at a standstill; and, in fact, the company reports that no further extensions are contemplated at the present time.

In this connection the probable extension of the use of autotrucks and automobiles as temporary arrangement in lieu of railway lines is being discussed generally, and the plan is understood to have the endorsement of the executive department of the island government. At present there is a considerable service of such vehicles centering in Tacloban, the capital of Leyte Province, where motor transportation lines are operated connecting that city with several important towns in the interior of the Province. The splendid provincial roads, built since American occupation, offer unusual facilities for extending such service. Railway projects in Iloilo and Cebu at present are receiving no further development, and the situation on the whole is considered unfavorable and unsatisfactory.

GENERAL

The Amur Railway.—The following information is from the report by H. M. Consul at Vladivostok, Mr. R. M. Hodgson, on the trade of that district in 1912:—

The Amur Railway, which is to connect, by means of a line entirely in Russian territory, the Siberian railway system with Khabarovsk and thence, by the already existing Ussuri Railway, with Vladivostok, has been progressing with unexpected rapidity. The distances on this line are as follows:—

	Versts.
Head section, from Kwenga to Urium ..	182
Western section, from Urium to Kerak..	596
Middle section, from Kerak to River Dyia	633
Eastern section, from River Dyia to Khabarovsk	480
Branch from Botchkaryoyo to Blagovestchensk	100
Short branch lines run to—	
Tchasovinskaya	28
Reynovo	63
Tchernayevo	40

Traffic on the head section has been open since 1910 and the western section was opened in the autumn of 1913. The whole of the middle section will be handed over for working

in the autumn of 1914. Work on the eastern section is being pushed forward rapidly, and it is now likely that the whole line will be in use for local traffic by the end of 1914. The completion of the railway will, however, be impossible before the bridge over the Amur at Khabarovsk is finished, and this—an engineering work of real magnitude, for the bridge is to be 7,038 feet in length—cannot, at the earliest, be before the autumn of 1915. It is intended ultimately to divide the whole line into two parts, the eastern part to be known as the Amur Railway and to have its headquarters at Alekseyevsk on the Zeya River, and the western part, known as the Ussuri Railway having its headquarters at Khabarovsk.

Russia is thus within measurable distance of executing, well within the projected time, the very formidable undertaking of constructing a railway 1,248 miles in length through country much of which was previously untrodden, and nearly all was uninhabited. Natural obstacles in the form of swamps and mountain ranges are met with all along the line except in the Zeya-Bureya district; the climate is extremely rigorous, and large tracts lie within the zone of perpetually frozen ground; moreover, it has been necessary to bring the whole working staff from great distances, mostly from European Russia. Under these conditions it is not surprising that the difficulties to be overcome were underestimated at the beginning, and that the expenditure has exceeded the original appropriations by some 40,000,000 roubles (about £4,222,000) or 20 per cent.

On the Ussuri Railway, important works are to be carried out, and 29,297,000 roubles (about £3,092,000) have been allotted for the purpose. The line is to be doubled throughout and between Kiparissovka and Nadyedjdinskaya, near Nikolsk, the permanent way is to be changed and a tunnel 2,450 feet in length cut. The branch line to Shkotovo is to be improved. The building of wharves for coal, timber and fish on the southern side of Golden Horn Bay renders a connexion with the railway system indispensable. A branch line, 14.37 versts in length, is to be constructed for this purpose from Pervaya Ryetchka—the first station out of Vladivostok on the Ussuri line—at a cost of 3,956,630 roubles (about £417,000). It will go round the Eastern extremity of the bay and will pass through a tunnel 4,200 feet long.

A further project now being investigated is the building of a railway line from Shmakovka on the Ussuri Railway near Lake Hanka to the coast at St. Olga, or from Khabarovsk to Imperial Harbour. The Ministry of Ways of Communication is at present studying the relative advantages of the two routes. Some connexion by rail with the coast of the Maritime Province is obviously necessary.

The land connexion with Europe is by the Siberian Railway, there being two express trains every week to and from Moscow, and one to and from St. Petersburg. The journey by these trains to London takes 12½ days. A very considerable economy can now be effected by leaving the Trans-Siberian express and utilizing the daily express which has lately started running between Irkutsk and Moscow; this train does the journey in the same time and has a restaurant car and similar accommodation to the Trans-Siberian express.

TRAMWAYS

Shanghai Tramways.—The returns of the Shanghai Tramways (Foreign Settlement) for the week ended July 1, are as under:—

	1914. $	1913 $
Effective receipts (after deducting loss by depreciation of subsidiary coinage)	20,134.84	17,743.43
Passengers carried . . .	1,175,255	930,460
Car miles run	69,783	60,826

The loss by currency depreciation for the week was $6,582.23 equal to 26.19 per cent. of the gross cash collected on the cars as compared with $5,020.67, equal to 23.28 per cent. for the corresponding week last year.

The following is the traffic return of the Shanghai Tramways (Foreign Settlement) for the month of June, 1914, and for six months ended June 30, 1914, with figures for the corresponding periods last year:—

	June, 1914. $	June, 1913. $
Gross receipts	109,165.24	99,058.54
Loss by currency depreciation	26,625,95	21,919,67
Effective receipts . . .	82,539.29	77,138,87
Percentage of loss by currency depreciation .	25.99	23.36
Car miles run	290,910	256,692
Passengers carried . . .	4,840,420	4,074,306

	six months ended June 30, 1914. $	six months ended June 30, 1913. $
Gross receipts. . . .	636,242.94	539,797.61
Loss by depreciation of subsidiary coinage..	147,281.55	116,382.65
Effective receipts . .	488,961.39	423,414.06
Percentage of loss by currency depreciation .	24.50	22.87
Car miles run . . .	1,602,117	1,356,311
Passengers carried	26,423,364	21,344,666

Week ended July 8.

	1914. $	1913. $
Effective receipts (after deducting loss by depreciation of subsidiary coinage)	20,337.60	18,057.72
Passengers carried. . .	1,193,808	958,999
Car miles run	70,443	57,653

The loss by currency depreciation for the week was $6,674.43 equal to 26.24 per cent. of the gross cash collected on the cars as compared with $5,113.25 equal to 23.23 per cent. for the corresponding week last year.

Week ended July 15.

	1914. $	1913. $
Gross receipts	25,926,85	23,158.76
Loss by currency depreciation.	6,400,69	5,011,66
Effective receipts . . .	19,526.16	18,147,10
Percentage of loss by currency depreciation . .	26.34	22.80
Car miles run	71,244	59,357
Passengers carried. . .	1,157,296	949,828

Week ended July 22.

	1914. $	1913. $
Gross receipts	25,324.10	23,191.46
Loss by currency depreciation.	6,195.15	5,192,73
Effective receipts . . .	19,128,95	17,998,73
Percentag of loss by currency depreciation . .	26.14	23.58
Passengers carried. . .	1,123,010	958,034
Car miles run	71,005	55,579

SHIPPING & SHIPBUILDING

Indo-China S. N. Co., Ltd.—The thirty-second annual report of the Board of Directors of this Company states that the trade of the year 1913 in China has shown generally an improvement on that of 1912, but the directors had to report a continuance of the keen opposition on the part of Japanese steamers which was experienced on the Calcutta line in the preceding year.

Including £10,083 7s. 7d. brought forward from 1912, the credit side of the revenue account amounted to £129,265 9s. 2d. After allocating £53,750 11s. 9d. to depreciation and reducing the expenses of debenture issue by £5,000, there remained with all outgoings provided for the sum of £50,447 2s. 3d.

An interim dividend of three per cent. on the cumulative preferred shares was paid in February last, which absorbed £7,438 7s. od. From the balance remaining it was proposed to pay the further three per cent. dividend on the preferred shares, £7,438 7s. od. and to also pay a dividend of five per cent. on the deferred ordinary shares for the year 1913, which will amount to £12,397 5s. od. This left a sum of £23,173 3s. 3d., of which it was proposed to transfer £8,173 3s. 3d. to the underwriting account, and to carry forward £15,000.

Nippon Yusen Kaisha.—The semi-annual general meeting of the shareholders of the Nippon Yusen Kaisha was held recently at Tokyo, when the business report and accounts for the six months ending March 31 last were presented. The following is a summary of the accounts:—

	Yen.
Net profit	2,563,841
Brought forward from last term	948,990
Total	3 512,831
To reserve	128,192
Funds for the expansion of services and improvements of steamers	400,000
Reserve for repairing Buildings..	500,000
Special Reserve	800,000
Bonuses to Officials	110,000
Dividend (10 per cent. per annum)	1,100,000
Carried to next term	974,639

The following is the report for the term:—

During the period under review the Company employed 85 steamers of its own, aggregating 368,000 tons, in addition to one specially commissioned steamer of 3,700 tons, and several chartered vessels. The passengers carried numbered 129,000, and the goods transported amounted to 2,100,000 tons, the distance covered by the fleet being 1,830,000 nautical miles.

Domestic Service.—As a result of depression in commercial and industrial circles in the latter part of the preceding term, the coastal trade generally was inactive, with the result that freight rates showed a considerable decline. On the Hokkaido Line shipping was remarkably dull. In Formosa business showed an increase over the preceding period because of the activity in sugar transactions. Passengers to and from the Island also increased. On the other lines there was no notable change.

Far Eastern Service.—On the Shanghai service, business was brisk on the outgoing voyages, but on the return trips the shipments did not come up to ordinary years. To North China ports business generally was dull. To Tientsin and Dairen the shipments showed no remarkable change as compared with ordinary years, but on the return trips there was a great falling-off. At Newchwang shipments of beans and bean-cake showed a slight increase. On the Chosen and Vladivostock services shipments were exceptionally brisk, and the number of passengers carried on the Shanghai and Vladivostock lines showed an increase.

European Service.—On the outgoing voyages on the European Line shipments from Japan and Shanghai were very dull. From Hongkong, the Straits Settlements and Colombo, however, there were large shipments. During the term under review the liners began to call at Malacca for the purpose of shipping India-rubber. On the return voyages there were considerable shipments to Far Eastern ports. Owing, however, to competition among the foreign shipping companies, and the consequent fall in freight rates, shipments of heavy goods from Antwerp were to a great extent affected. The freight traffic on the European service was depressed during the latter part of the term under review. As a result of the placing of new liners on the run, the first and second-class passengers showed an increase. During

the term the regular liners *Tango-maru* and *Aki-maru* were replaced by the *Katori-maru* and the *Kashima-maru*, each of an aggregate tonnage of 10,000 tons. The new steamer *Tokushima-maru* was also placed on the route as a special liner. The steamer *Wakasa-maru*, which carried a number of Japanese emigrants to Brazil, was commissioned, on the return voyage, to ship cargo from Europe and other ports.

American Service.—On the voyages to America shipments were very dull. This was due to competition between the various shipping companies. On the outgoing voyages some of the Company's liners had to carry a quantity of coal to be used on the return voyage, and yet their bunkers were nearly empty on their return. There was a considerable decline in the shipments of wheat and flour, which constitute the principal merchandise shipped on the return voyages, but the consignments of machinery, cotton and salted fish were rather brisk. The Company tried its best to secure as much cargo as possible at intermediate ports from Japan to Shanghai and Hongkong, but without result. On both the outgoing and return voyages the cargo shipped showed a considerable decline.

Australian Service.—Shipments from Japan to Australia were very small, but from Hongkong and Manila a considerable quantity of merchandise was shipped. On the return voyages there were considerable shipments of wool, lead, and fertilizer, etc. During the six months under review the *Inaba-maru* was replaced by the *Tango-maru*, withdrawn from the European service for the purpose. The strike of labourers in Australia has had a very bad effect upon shipping traffic there. The passengers carried numbered about the same as in preceding years.

Bombay Service.—On both the outgoing and return voyages the shipments were large, especially on the outgoing voyage, this being due to large shipments of cotton. Shipments of yarn consigned to Shanghai and Hongkong fell off considerably. For the benefit of cotton spinners in Japan the Company during the cotton season increased its liners from six to eight, so that instead of a fortnightly service there was a service every ten days.

Calcutta Service.—The shipments from and to Japan were large. Shipments of beans from Rangoon increased considerably, but other cereals were not so brisk. The cabin passengers showed an increase. Competition on this route continues, and freight rates during the period have ruled very low. As a result, the Company has suffered considerable losses and experienced great hardships in carrying on the competition. However, trade between Japan and India, through this service, is steadily developing.

New Steamers.—The new steamer *Yasaka-maru* (12,000 tons), built in Japan, was launched on March 14, while another new steamer, the *Suwa-maru*, of equal tonnage, was launched on March 29. These vessels are expected to be completed in October next, when they will be placed on the European service. In addition the Company has ordered from domestic and foreign yards a steamer of 12,000 tons and six steamers, each of 7,500 tons, all of which are to be completed between August this year and April next.

MINING

Kailan Mining Administration. — The total output of the Administration's mines for the week ended June 20, amounted to 61,542.90 tons and the sales during the same period to 61,070.89 tons.

Week ended June 27, output 58,285.98 tons, sales 48,676.58 tons.

Week ended July 4, output 59,817.43 tons, sales 43,343.70 tons.

Week ended July 11, output 61,199.74 tons, sales 46,567.10 tons.

FINANCIAL

Hongkong Coinage Questions.—The Colonial Treasurer (Hon. Mr. A. M. Thomson) makes the following reference to the Colony's currency problems in his report for 1913:—

The stock of subsidiary coins on the 31st December was of the face value of $149,935.72 as follows:—

50 cents	$ 2,973.00
20 „	33,631.60
10 „	74,162.00
5 „	5,196.85
Copper	33,972.27
	$149,935.72

while $200,000 in 10 cent-pieces were shipped to London on the 19th December.

The value in the Treasury Books was $326,612.09, discount written off the stock being taken at 7 per cent. Coins of the face value of $1,040,000 were sent to England during the year for purpose of demonetization.

The limits between which the rates of discount ranged were:—

cent-pieces.	per cent. to	per cent.
50	par	3¾
20	3½	8
10	6⅜	12½
5	1	6
Copper	par	—

On the 1st July, an Ordinance (No. 15 of 1913) prohibiting the circulation of foreign silver and nickel coins was passed to come into force on the 1st March, 1914.

The circulation in December of notes of the three Banks having authorized issues was as follows:—

Hongkong and Shanghai Bank ...	$18,417,339
Chartered Bank of India, Australia and China	5,429,671
Mercantile Bank of India	704,742
	$24,551,752

Ordinance No. 13 of 1913, which came into force on the 1st August, prohibits the circulation of any notes other than those of the Banks whose issue is authorized by law or charter.

In consequence of this new law the circulation of Chinese and Portuguese bank notes has entirely ceased.

Banque de l'Indo-Chine.—The report for 1913 of the Banque de l'Indo-Chine states that in spite of the troublous times in the regions where the business of the bank is carried on the results of the twelve months' working were satisfactory. In fact the profit for the first half-year was the highest yet recorded, reaching the sum of Frs. 3,720,764. A dividend of Frs. 27.50 was declared on January 2 for this period, and out of a profit of Frs. 3,362,479 for the second six months a similar dividend has now been declared, making Frs. 55 for the year, as against Frs. 52.50 in 1912, and Frs. 50 in 1911. It is noted that the amount appearing on the balance-sheet under "bank premises" has increased from Frs. 4,600,832 last year to Frs. 7,421,054, and this is partly due to the buildings that have been erected in Singapore and Shanghai, although it is principally on account of the acquisition of a site for new premises in Paris, the present quarters having become altogether inadequate. The development of the bank in consequence chiefly of the extension of its business in China, and the prospective formation of new branches, has led the directors to consider the erection of premises perhaps a little large at present, but which constitute a prudent provision for the future, while it will be possible to let to Colonial associations having relations with the bank the portions which are not yet required. The report further states that it will be necessary to take into consideration the building of new premises at Pondicherry and Peking; while the construction of offices of more modest proportions is being proceeded with at Papeete and at Mengtze, in Yunnan, where the Government has desired the formation of a new agency.

Referring to the economic situation of the countries within the bank's sphere of activity, the report goes on to say that the export of rice from Cochin-China in 1913 amounted to 1,180,000 tons, a quantity which had not been attained since 1907, and the prospects for the current year are such that a still greater export trade is expected. As a result of the favourable harvest business in Cambodia and Battambang has again become normal. In Tongking the undertakings had to suffer slightly from a decline in busines, owing to the less plentiful harvest of rice and maize; but the production of ores was greater than in 1912, and, with the exception of rice a favourable harvest of land products was won in Annam. The agencies of the Banque de l'Indo-Chine in Hongkong and Canton did not suffer from the suspension of payment in Singapore and Siam. After stating that a general improvement took place in China, and referring to the first part of the reorganization loan, the report mentions that two questions are at present attracting attention—the redemption of the paper money issued during the revolution and the general monetary reform. The solution of these problems requires the assistance of European banks, supported by their respective governments, and the establishment of adequate guarantees. Since the conclusion of the last loan the results have been more encouraging than had been expected.

Netherlands Trading Society. — The General Balance Sheet and Profit and Loss Account of the Netherlands Trading Society to December 31, 1913, show that the net profits amount to Guilders 5,071,577.63 (£422,632), out of which, after providing for the statutory reserve to the extent of Guilders 561,444.92 (£46,787), a dividend of 9½ per cent. has been declared. Combined statements of liabilities and assets and of profits and losses, are drawn from the balance Sheets and profit and loss accounts of the head office and branches. In accordance with a resolution passed by the general meeting of shareholders on December 8, 1913, an issue to shareholders has been made of 5,000 new shares of Guilders 1,000 at 145 per cent., which were paid for January 6, 1914. The total paid up capital has been increased to Guilders 50,000,000.

PERSONAL

Mr. F. M. Sah has been appointed to attend the Postal Conference at Madrid in company with Mr. Piry, as representatives of China. Mr. Sah has been connected with the Board of Posts and Communications for some years and is known as a progressive and well educated official.

Mr. J. E. Foley, Traffic Managar of the Peking-Mukden Railway, and Mr. K. H. Chen, secretary of the Ministry of Posts and Communications will represent China at the Railway Conference to be held in Marseilles. Mr. Stells will act as Traffic Manager of the Peking-Mukden line during the absence of Mr. Foley.

Mr. T. W. T. Tuckey, the chief engineer of the Southern portion of the Tientsin-Pukow Railway, has received the Fourth Class Chia-ho Decoration, in recognition of his services.

Mr. John M. Darrah, the United States Postal Agent at Shanghai, has had conferred upon him, by a Presidential Mandate the Fourth Class of the Order of the Excellent Crop.

SOUTH MANCHURIA RAILWAY COMPANY.

STATEMENT OF ACCOUNTS FOR 1913.

Following is the statement of accounts for the South Manchuria Railway Company for the fiscal year 1913:—

GENERAL BALANCE SHEET

Assets.

Capital unpaid		40,000,000.000
Property taken over from the Japanese Government		100,000,000.000
Stores		6,966,411.464
Coal in stock		1,301,116.020
Shares in other companies		782,845.000
Capital expenditure:—		
Railway	72,262,371.051	
Steamship	4,892,636.558	
Electricity	4,747,114.827	
Gas	1,296,649.538	
Harbour and Wharves	10.965,976.080	
Mines	12,247,148.450	
Workshops	6,064,830.207	
Hotels	1,617,224.159	
Land Impr'ts.	4,016,938.385	
Land	9,771,874.602	
Buildings	10,551,198.029	
Total		138,433,961.886
Discount on debenture issue, less amount written off		5,042,451.960
Sundry Debtors		2,073,919.325
Payments on Suspense a/c		2,097,863.105
Loans		6,119,089.500
Payments on a/c of uncompleted works (Workshops)		773,280.168
Payments on a/c of uncompleted works (Construction)		358,808.581
Deposits		8,093,403.451
Postal and Revenue Stamps		10,117.445
Cash in hand and at Bank		452,179.609
		312,505,447.514

Liabilities.

Capital Authorized 200,000,000.000		
Capital subscribed		160,000,000.000
Reserve prescribed by Law		1,132,888.660
Special Reserve		8,900,000.000
Debentures		117,156,000.000
Land Administration a/c.		47,939.213
Sundry creditors		3,130,718.763
Receipts on Suspense a/c		10,148,670.535
Employees' Savings Deposits		2,279,627.900
Guarantee Money		136,533.730
Agencies		254,577.410
Balance brought forward from Last Term	2,151,212.299	
Balance for the Term	7,167,279.004	
		9,318,491.303
		312,505,447.514

PROFIT AND LOSS ACCOUNT FOR THE FISCAL YEAR ENDED MARCH 31, 1914.

Dr.

To Railway Expenditure	7,913,948.370
„ Steamer „	799,286.640
„ Mining „	12,571,681.200
„ Harbour „	1,728,910.500
„ Land „	1,951,538.280
„ Hotel „	280,636.530
„ Electricity „	642,809.830
„ Gas „	106,057.360
Sundry Losses	338,354.793
General Management Expenditure	2,671,917.640
Interest on Debentures	5,564,910.000
Writing off Discount on Debentures Issue	680,093.280
Balance for the Term	7,167,279.004
	42,417,123.427
To Reserve prescribed by Law	358,363.960
„ Dividend on Government shares	2,500,000.000
„ Dividend to Shareholders other than the Government, at the rate of 6 per cent. per annum	1,058,427.200
„ Supplementary Dividend to Shareholders other than the Government, at the rate of 1 per cent. per annum	176,404.520
„ Special Reserve	2,000,000.000
„ Bonus to Officers	300,000.000
„ Honorariums for Retired Officers	300,000.000
„ Balance carried forward to the next term	2,625,295.623
	9,318,491.303

Cr.

By Railway Receipts	22,275,132.040
„ Steamer „	672,616.660
„ Coal „	14,372,232.430
„ Harbour „	1,911,716.570
„ Land „	900,852.660
„ Hotel „	259,961.510
„ Electricity „	977,880.330
„ Gas „	183,500.420
„ Sundry „	117,509.087
„ Interest Account	745,721.720
	42,417,123.427
By Balance brought forward from the preceding Term	2,151,212.299
„ Balance for the Term	7,167,279.004
	9,318,491.303

Dr. Nomura, President, and Mr. D. Ito, Vice-President of the South Manchuria Railway Company, have been compulsorily retired. Lieut.-General Baron Y. Nakamura has been appointed President. He was previously the President of the Steel Works at Edamitsu. Mr. Kunisawa has been appointed Vice-President.

PUBLICATIONS, CATALOGS, ETC.

The Deutsche Maschinenfabrik, A. G., of Duisburg is noted for its splendidly turned out trade books and brochures. Recently we made reference to "The Industrial Harbour" relating to cranes and transporting appliances for the quick handling of goods in modern harbors, and we are now in receipt of two more books, one devoted to giant cranes and the other to cold rolling machinery. The Deutsche Maschinenfabrik A. G. has been engaged in constructing hoisting appliances since the year 1830, and the book relating to giant cranes gives interesting particulars in regard to the various cranes turned out from the works of late years. These include the largest revolving and floating crane in the world of 250 tons maximum working capacity, constructed for the Imperial Naval Yard in Wilhelmshaven. The book on cranes as well as that on cold rolling machinery, is excellently illustrated.

Messrs. Mather & Platt, Ltd., send us their recently issued book on patent mechanical filters for industrial purposes. This catalog is splendidly illustrated and shows a number of the installations supplied by Messrs. Mather & Platt, Ltd., to concerns in various parts of the world.

The Selson Engineering Co. Ltd., of Queen Victoria Street, London, forward us an attractive abridged pamphlet of Machine Tools. The pamphlet is well illustrated and full information is supplied in regard to this firm's various specialities, including shaping, milling, rounding, gear cutting, broaching, planing and other machines, lathes of all kinds, etc. etc.

The Administrations of the Chosen Railways and the Shantung Railway Company have recently issued leaflets giving very complete information about their respective systems, and showing the connections that can be made with other lines.

THE SUGAR INDUSTRY IN THE PHILIPPINES

The following extracts are from a letter by Mr. G. E. Nesom, formerly Commissioner of Agriculture in the Philippines, published in the *Louisiana Planter and Sugar Manufacturer* of May 2:—

It is evident that the sugar producers of Louisiana and in the beet country as well as the refiners are getting a much clearer vision of the true position of the Philippines as a factor in the American sugar supply than was possible when the question of the admission of sugar from there into the mainland of the United States was a political issue. Men on both sides of the issue have seen their conclusions reversed, especially those Louisiana planters who claimed to believe that the Philippines would flood the United States with free sugar, produced by cheap Oriental labor. The extent to which erroneous views were created may be illustrated by the case of a prominent Government official who visited the Islands under the impression that the whole country was "a waving field of cane from shore line to mountain top." As the steamer approached the San Bernadina Straits he called his friends to the deck to view the cane fields on the mountain sides, only to find, on closer view, that the rugged coast of that section is largely unoccupied and the deforested hillsides covered with the tall tropical *talahib* grass. It took him a long time to realize, that nearly half of the sugar produced in the Islands comes from a little group on the west coast of the Island of Negros embracing less territory than some of the parishes of Louisiana.

Even as late as April 18, 1914, an editorial in the *Louisiana Planter* ends with the observation that: "The Philippines, so far as soil, climate and population numerically considered could readily produce nine million tons." As an offset to this kind of view, one of the men sent to Washington to argue for free sugar for the Philippines compiled figures to show that if all of the land suitable for cane growing in Louisiana and Texas were reclaimed by drainage and irrigation it would be sufficient to produce enough sugar to enable growers there to monopolize the sugar market of the United States.

We are just about as likely to see this enormous increase in the cane crop of the South as we are to have a corresponding encroachment on the American sugar market by Philippine sugar producers. Many *have felt* that they had the correct view who had never looked at the *facts* in the case, and it is with some of these facts gained from seven years' residence and close contact with the sugar industry of the Philippine Islands, as well as a fair knowledge of the sugar situation in the Hawaiian Islands and Louisiana, that I propose to deal.

From the day the United States acquired the Philippine Islands a great many domestic sugar producers and their friends *have felt* that a strong restraining influence was necessary to prevent American capitalists from converting the Philippine Islands into that waving field of cane about which so much was said in sugar circles five or six years ago. Corporation laws, land ownership and public sentiment were so shaped as to keep them out. The man on the ground, and looking at the facts, was quite sure that strong inducements would have to be offered to get capital put into any agricultural proposition in the Islands. It was even difficult to get enough capital interested to carry on the ordinary commercial operations of the country, and to-day a large part of the inter-island shipping and import and export business is carried on by means of foreign capital. American capital has shown a timidity of investment there, which to my mind was perfectly natural. Safety is the watch word of the investor, and he has never felt that a permanent investment would be entirely safe in the Philippines with their uncertain political future. This seems to be shown clearly in the withdrawal of capital and decrease in both the imports and exports of the islands since the beginning of the Democratic administration there, and particularly the decrease in the exports of sugar to the United States. While it is not intended to present any political arguments here, the opponents of free sugar have the Democratic policy to thank for effectually eliminating the Philippines as a factor in the American sugar trade for many years yet to come, if that will afford them any consolation. It is a fortunate thing for the Island that they are at the door of China, where the consumption of sugar is rapidly increasing among that vast population.

Although we hear much more about the few mills in the Philippines built or controlled by Americans than those of the Filipinos, who produce most of the sugar consumed and exported, the fact remains that Americans have not, and will not, in the near future, become the dominant factor in the production and handling of sugar in the Islands. The Americans who have gone into the sugar business in the Philippines have in many cases well sustained the reputation for which we are so well known among foreigners—that we are Americans, very proud of that fact, and unwilling to learn anything of foreigners. True it has cost them rather dearly, but they are not men to admit a mistake. For example, the first American sugar venture of any importance in the Philippines was seized upon by the anti-Philippine, anti-free sugar, anti-trust contingent of sugar people in this country and made the subject of an expensive congressional investigation which served but little purpose except to further estrange the Philippine and continental sugar men. The facts were that the Philippine Government had succeeded in unloading a big friar estate on the nethermost end of an almost uninhabited island where native laborers from other islands could scarcely be induced to go on account of the racial gregarious characteristic of the Filipinos, and a superstitious dread of a race of man-eaters supposed to lurk in the forests of the island. During the investigation the men who bought this hacienda were pictured by the opposition as financial magnates of New York and Cuba who were so old in the trust arena that they had horns as long as a Texas steer. But they showed themselves true to the American tradition, defended themselves as best they could, and their friends never dropped a hint that the discouragements they had met had been so numerous that they would have closed out their entire Philippine project much below par.

These men had plenty of money, but no experience among the monsoons and Malays. They had to learn all about the physical and climatic conditions on their property, and they took a long and expensive course in Filipino character and tropical sanitation before they attained much success. They had to build a railroad fifteen miles from the mill site down the coast to a harbor that was safe from typhoons, bring all their labor from a distance at almost double the normal wage, provide all living facilities, medical attention, sanitation and transportation back to their homes when they became sick or dissatisfied, ship all their supplies from Manila or elsewhere. The seed cane was obtained from distant islands, and the management learned, by an almost complete crop failure the first year that mature body cane is not viable in the Philippines, especially without irrigation during the dry season when the planting is done. They built one of the finest mills that money could buy, and when it was ready to run they did not have enough cane to supply seed for their fields the next year. Had this mill been located in the cane growing district of Negros where the Filipinos are laboriously butchering their cane every year on little three-roller mills and evaporating the juice in cast iron cauldrons, and operated as a modern central, buying its entire supply of cane it would have paid for itself in profits before it ever had half a season's run.

Some five years ago, two Americans who had saved a little from their salaries in the Philippines bought comparatively small tracts of suger land adjoining each other near Manila. Both managed to keep up the payments on the land and one of them succeeded in building a small, modern mill on his tract. Both needed money for operations and development, but neither could get it, and the one who had no mill recently proposed to sell out to the other, who promptly advised him that he would not have the land as a gracious gift if it necessitated keeping up the payments. The land is all right, the climate is almost ideal, the transportation by rail, water and turnpike could scarcely be improved, but the small investor knows too well that the majority of those who have put their savings into farm land investments have lost them, and the man of Wall Street is not looking for investments in the sugar lands of the Philippines.

I would not for a moment argue that there is not a splendid opportunity for the investment of American capital in the Philippine sugar industry, but am fully convinced that the opportunity is in the manufacturing end of it rather than in the agricultural. To my mind the San Carlos central mill represents the best type of investment there for theAmerican, and is worthy of the most careful study by those who would engage in the sugar industry of the Islands. My reasons for this conclusion are two-fold. In the first place, I am of the opinion that it is best everywhere to separate the growing of cane and the manufacture of sugar from a business standpoint just as far as possible. If all the facts were known, it could readily be seen that many of the plantation mills in Louisiana and the Hawaiian Islands have been sacrificing a large part of their earnings to cover up the excessive cost of growing cane as a result of poor farming. There are also cases where good farms that would have made money selling cane have been called upon to meet the deficits resulting from poor manufacting. In either case a complete separation would have readily located the defect, which a common management, through personal pride might conceal forever. The complete separation of the two is much more imperatively demanded when the land producing the cane is cultivated by an oriental race who differ widely from the American in their views of land tenure, industry, religion, social relations, politics and business.

The San Carlos idea recognizes the grower of cane as in a separate business, contracts to take his product at the mill carrier where the manufacturer assumes complete charge of it and performs all services necessary to handing the grower a check for 60 per cent. of the net returns from the sale of the sugar secured from his cane. The idea is of Hawaiian origin among men who have worked Oriental labor in the cane fields ever since the missionaries went there. It was backed by the Hawaiian sugar factors, who took years to work out the details with the cane growers of the San Carlos Valley on the east coast of the Island of Negros. The final result was that the hacienderos of that valley leased for a long period a suitable mill site, water front for docks, railway right of way all parts of the valley and other minor considerations, and contracted to grow cane for the central mill for a period of thirty years.

The capitalists, on their part, agreed to build a modern central mill, capable of handling the cane of the valley, construct a plantation railway to suitable points for receiving the cane from all the plantations, supply the cars and operate the road, and provide suitable docks for loading the sugar on vessels for export, transport, manufacture and sell all the sugar produced from the cane supplied. As far as possible the line of demarcation between the two interested parties was clearly defined, the cane grower having complete control until the cane is delivered on the cars, and the mill operators assuming all responsibility thereafter. The agreed division of the net proceeds on the basis of 60 per cent. to the grower and 40 per cent. to the mill owners represents a compromise on the part of both parties to the contract. It may be taken as an indication of the inducement demanded by

capital for investment in sugar mills out there and the price which the Filipino cane grower can afford to pay for good milling. It gives no distinct advantage to either party during any range of fluctuations in prices, and promises to be permanently satisfactory to both the grower and manufacturer.

The future of the sugar industry of the Philippines lies along the paths maked out by Java in better milling and the manufacture of white sugar for consumption in China, Japan, and other parts of the Orient.

THE GRADING OF MANILA HEMP

The plans of the government of the Philippines for the official grading of Manila hemp and other fiber products of the islands, have been established as law by the Philippine Legislature. The plan of classification and grading was adopted after most vigorous opposition on the part of Manila and other exporters of, and dealers in, hemp on the ground that the proposed grading and classification would do away with recognized brands of exporting firms, that it would be expensive, and that the colors, texture, strength, and other qualities of hemp were so various that it was impracticable to attempt to set up arbitrary standards for such purposes.

By the provisions of the new law, which will go into effect in January, 1915, the government proposes to establish fixed standards for the grading of Minila hemp or abaca (*Musa textilis*), the Manila maguey (*Agave cantala*), and sisal (*Agave sisalana*). These standards are to be determined by the Director of Agriculture, with the assistance of such experts as he may call to his aid, and shall be announced six months before the new act goes into effect. The new standard samples will be prepared in suitable form by the Bureau of Agriculture, and interested parties can secure such samples of the various fibers for use in grading upon application and payment of the cost thereof.

GRADING ESTABLISHMENTS FEES BALING REQUIREMENTS

The grading is to be done only in establishments licensed annually by the Director of Agriculture for the purpose. There are to be five classes of these grading establishments, graded according to the quantity of loose fiber they bale and grade, i. e., first-class establishments, handling 5,000 metric tons and more of such fiber; second-class establishments, handling between 2,500 and 5,000 metric tons of fiber; third-class establishments, handling between 2,000 and 2,500 tons; fourth-class establishments, handling between 1,000 and 2,000 tons; fifth-class establishments, handling between 500 and 1,000 tons; and sixth-class establishments, handling less than 500 tons annually. Fees are to be paid by these grading establishments of $500, $250, $125, $50, $25, and $12.50 per annum.

The fiber is to be graded according to the standards established by the Government, represented by samples furnished for the purpose, but each grading establishment which is also an exporter of the fiber, may use private marks or brands in connection with the name of the official standard provided that such marks shall have been registered at and authorized by the Bureau of Agriculture. The fibers graded by these establishments shall be pressed into bales approximately of the following dimensions and weights: Length, one meter (3.28083 feet); width, 50 centimeters (1.6404 feet); height, 55 centimeters (1.804 feet); weight, 125 kilos, or 275 pounds net. The size of bale and other conditions applying to any particular grade of hemp in which excessive pressure would be injurious will be determined later by the bureau. The limit of the size of diameter and weight of each hank of fiber in the respective bales is to be announced at least six months before the law goes into effect. The hanks in each bale shall be of uniform color, size, and extraction, and each shall be tied by a portion of the same fiber. Every bale shall be free from strings, waste, tow, damaged fiber, fiber other than that which constitutes the bale or other extraneous matter, and the fiber shall be dry. No grading establishment can charge more than $4 per metric ton for grading and baling any fiber covered by the act.

INSPECTION OFFICES—CONFORMANCE TO TRADE STANDARDS

For the execution of the act the Director of Agriculture is authorized to open a special Fiber Inspection Office, with necessary suboffices in hemp districts, and to appoint inspectors to be stationed an each export port and such other grading stations in the territory as may be necessary. The inspectors shall supervise the grading and baling of fiber and shall issue inspection certificates. A certain number of fiber inspectors are to be detailed to educate producers as to the manner in which they shall prepare their fiber to meet the requirements of the act, All fiber of which an official standard is established shall be graded and baled subject to the inspection of these officers. Every shipment of fiber shall be accompanied by a certificate of inspection, the certificate being transferred with the ownership of the lot covered by it.

While the law is regarded as more or less experimental it is generally recognized in the trade that some such system has come to be necessary for the protection of the hemp-producing interests and the good name of the Philippine hemp and other fibers, and it is believed that the system now established with such modifications from time to time as experience may indicate as advisable will effect the desired purpose. It is understood that the standards arranged by the Bureau of Agriculture will conform as far as practicable to well-established qualities and brands now known to the trade.

In order to make a study of the character of grades needed by the textile mills abroad which use Manila hemp, the Philippine Department of Agriculture has sent Mr. Murat M. Saleeby, its fiber expert, on a tour of investigation.

RAILWAY CONFERENCE AT TOKYO.

The International Railway Conference recently held in Tokyo is rep orted to have been quite successful and it expected that there will be great improvement in the passenger service between China and Japan. Arrangements were made whereby through railway tickets will be sold from Japan to points in China such as Kalgan, Hankow, Shanghai, etc. An arrangement for checking beggage through to destination was also made and it is believed that the conference will result in increased passenger Traffic over the Chosen railway and connecting lines. The next International Railway conference will be held in Peking in April.

The representatives of China at the Conference were Mr. J. E. Foley of the Peking-Mukden Railway and Mr. K. H. Cheng, Secretary of the Board of Communications, Peking.

The figures showing the import and export trade of the Philippine Islands for the six months ending June 30, show an increase in the value of imports and exports as compared with the same period for the year 1913.

The value of the imports has increased P1,759,260 while the exports have increased P6,880,066, or a total increase in the trade of the islands for the first six months of the year of P8,639,326.

The total value of the imports amounted to P55,761,584 for the past six months as against P54,002,324 for the same six months last year, while the exports amounted to P53,967,998 for this year, as against P47,087,932, for last year, making the total trade for the six months P109,729,582, as against P101,090,256 in 1913.

The value of the goods imported into the islands exceeded the value of the exported products of the islands by only P1,759,-260, which is nearer a balance in trade than has ever before been attained since 1899, when the balance of trade was in favor of the islands by nearly P3,000,000. The large exports of sugar and hemp during the month of June, which exceeded the exportation of these two items for that month last year by nearly P5,000,000, are largely responsible for the increase shown in exports, and were larger that the exports of these products for any other single month of the six, either this year or last.

"YALE-IN-CHINA"

WESTERN UNIVERSITY MOVEMENTS IN THE REPUBLIC

The following brief history of a most interesting movement is supplied by Dr. Edward H. Hume, Physician in Charge of the Changsha Yale Hospital.

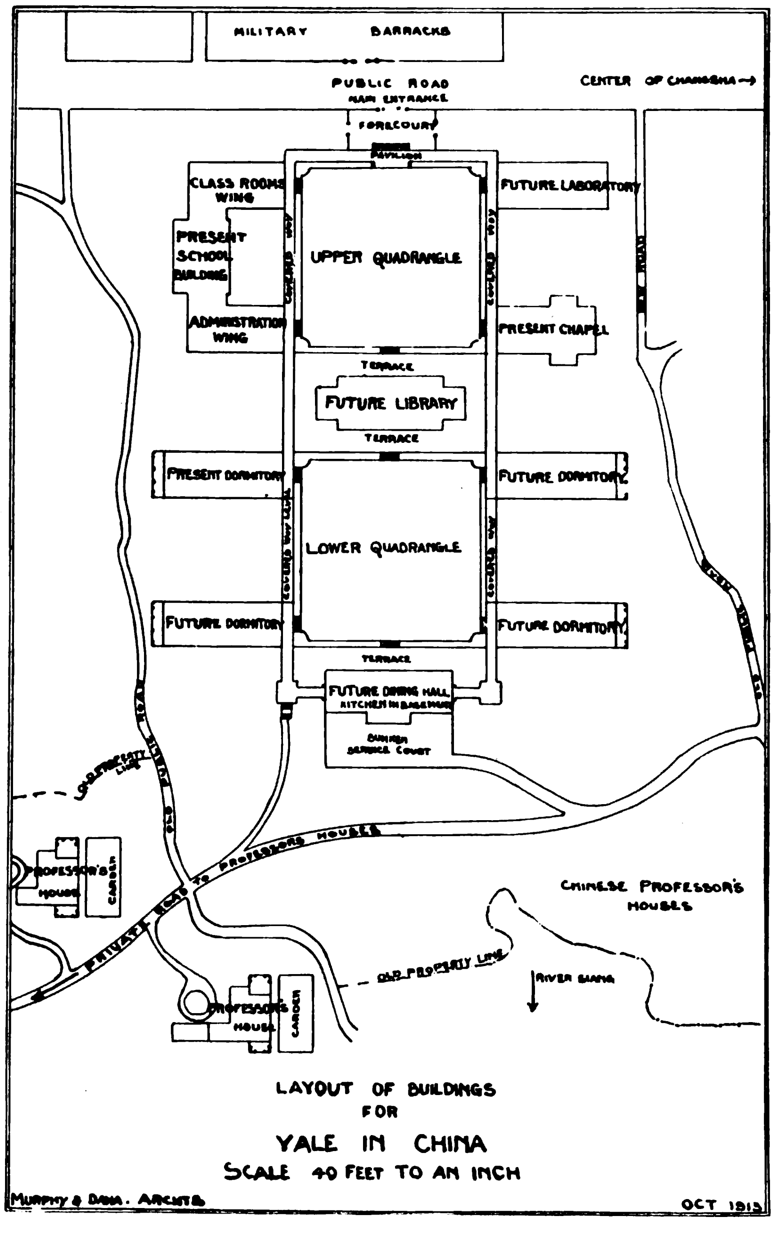
Inspired in part by the activity in Northern India of an Oxford-Cambridge Mission, graduates of Yale University conceived the idea in 1900, of undertaking an outreaching work in China. After two years of conference with older men and a good deal of groundwork, the first appointee of the newly formed Yale Society sailed for China in 1902. He spent his winter in the north of China studying Chihli, Shansi and Shantung with a view to determining the location of the proposed work. The summer of 1903 saw two significant steps taken. The first was the acceptance of the invitation to locate the Yale work at Changsha. Hunan had been practically closed to foreigners prior to the Boxer Movement; but after 1900 it was rapidly occupied by missionaries and business men. In June of 1903 at a conference of all the missions in the province a hearty invitation was extended to the Yale representative, Lawrence Thurston, to locate the Yale movement at Changsha and it was possible, very soon after, to send an equally cordial acceptance.

The second important step was the decision to make of the Yale work a distinctively educational movement. It was eminently fitting that a *Yale* movement should be educational; and it was equally fitting that the new movement, thus called to Hunan, should introduce something that would supplement the work of the missionary societies by establishing, as proposed, a college which would be a central institution of higher learning for the province; rather than by adding one more to the number of missions doing evangelistic work. There has been no step since 1903 of such deep significance as these two; the choice of Changsha and the definite confinement to educational lines of work.

Thurston died in 1904—of tuberculosis; but not before his successor had come to China and others had committed themselves to the movement.

Surveying rapidly the ten years that have passed since then, one may observe:—

1. *The Staff*. Fifteen men and three women have been sent out from America up to the present as salaried workers (exclusive of wives). Of this number four have been doctors and two graduate nurses. Four new teachers for the college and one new doctor are expected during 1914: and in addition, two supervising architects have been employed during the past year.



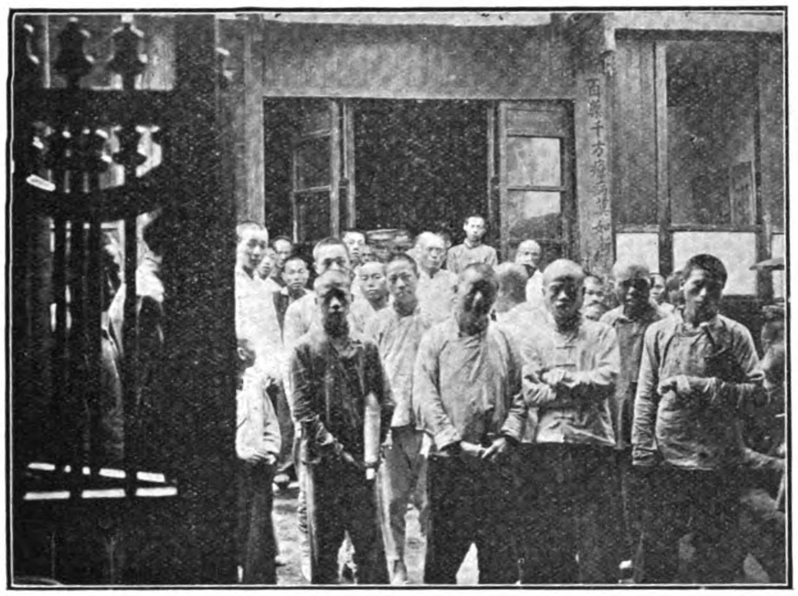
LAYOUT OF BUILDINGS FOR YALE IN CHINA
SCALE 40 FEET TO AN INCH

2. *Scope of the Work*. Starting with a single group of boys in November 1906, The Preparatory Department for the College, doing work of grade equal to that of a Western high school, now numbers well over 100 students. The number would be twice as large were the accommodations adequate. Three classes have completed the work of the Preparatory Department; and of the graduates seven will form a Freshman College Class to begin work in 1914.

On the medical side, a dispensary with eight beds was started in 1907, and has now expanded into a women's hospital of 38 beds, and an associated men's hospital (the hospital of the Red Cross Society) with over 80 beds. 15,500 out-patients were seen in the women's hospital alone in the year 1913-14; and counting in calls to homes, in-patients, and others, a total of over 38,000 treatments was given by the two hospitals during the same year. The laboratory is equipped for modern bacteriological and chemical work and is providing ample material for study for a number of workers. In the women's hospital eleven pupil nurses are in training, and over twenty at the men's. No single endeavor during the past year has been more fruitful in satisfactory results than the establishment of these training schools.

The way to actual medical teaching seemed strangely difficult until a year ago, when, after many attempts to formulate other plans for a medical school, leading citizens of Changsha came forward with a scheme for co-operative medical education. The then Governor, T'an Yen-k'ai, heartily supported the plan, and in the summer of 1913 a tentative agreement for medical education to be conducted co-operatively by Yale and the Hunanese was signed. The nursing schools commenced under this agreement have gone forward without interruption, as mentioned above, in conjunction with the hospital work; but the medical preparatory course, started in December of 1913, had to be discontinued temporarily because of the Government's desire (in Peking) to modify the agreement. Negotiations are now in progress and we look forward to a vigorous re-commencement of medical educational work in the Fall of 1914.

3. *The Uniqueness of the Movement*. From the first, the American staff has sought to emphasize its desire to welcome Chinese colleagues in full fellowship, whenever their Western training and other equipment should prove their readiness. The first Chinese on the staff as a full member has been Dr. F. C.

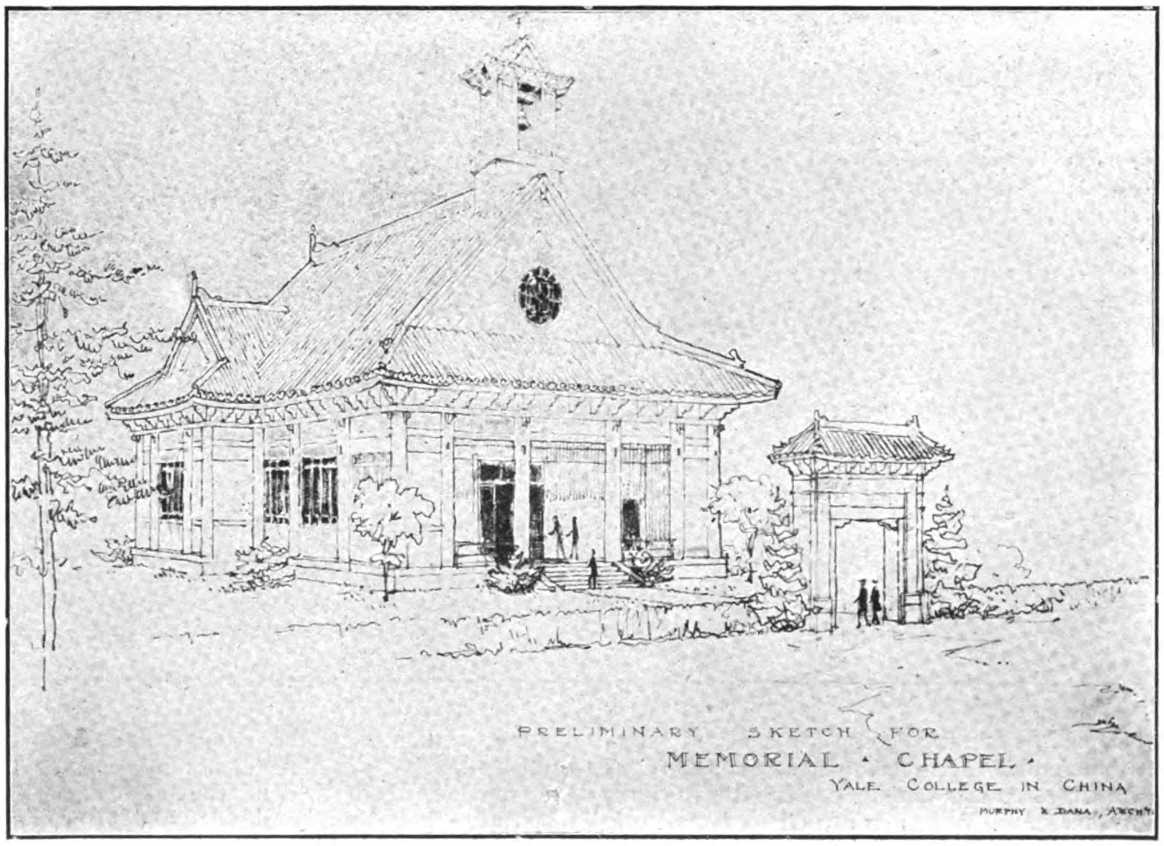


Yale Hospital, Changsha.—Crowd waiting for treatment at dispensary hours.

Yale Hospital, Changsha.—Even in old buildings modern medical treatment can be given.

Yen, son of one and nephew of another distinguished clergyman of the Episcopal Church in Shanghai. Dr. Yen's presence has been a constant means of deepening those ties of fellowship with the Chinese which are the natural basis for the forward work of the coming years. Reference to the sketch about the proposed buildings will show a further attempt to develop Chinese relations. The Yale Committee believes that every possible step should be taken to conserve the architectural heritage of old China, blending it with the structural requirements that the modern world makes to-day.

In Changsha the Yale movement has found a city full of pride over its ancient history and full of energy for the forward movement of to-day. The Principals of the city schools are not infrequently in conference with the teachers of the Yale Faculty, and not infrequently secure their services for their own institutions. And the doctors of the Hospital staff all serve as advisers to the Bureau of Hygiene, which, under the inspiration of a most energetic Police Commissioner, is undertaking systematic improvement of those conditions that have favored disease. Their work is further aided by the activities of the Changsha Women's Social Service League—which provides sterilized milk for needy children, lectures and literature on home hygiene, a visiting nurse, help to indigent women needing hospital treatment, etc.



American University men may well feel that the service which their training fits them to give finds abundant outlet and opportunity in this energetic capital city in the heart of China.

The Committee in charge of the Yale in China work consists of

Clarence H. Kelsey, Yale, ... 1878, President;
Dr. Amos P. Wilder, ... 1884, Vice-President;

Executive Committee

F. Wells Williams, ... 1879, Chairman;
L. P. Breckenridge, ... 1881,
E. B. Reed, ... 1894,
W. H. Sallmon, ... 1894,
A. P. Stokes, Jr. Yale, ... 1896;
S. Thorne, Jr. 1896;
A. C. Williams, ... 1898;
W. Walker, ... 1901;

China Committee

Dr. F. C. Yen, 1909;
W. J. Hale, 1904;
E. D. Harvey, 1907;
O. C. Morse, 1910;
P. S. Achilles, 1913;

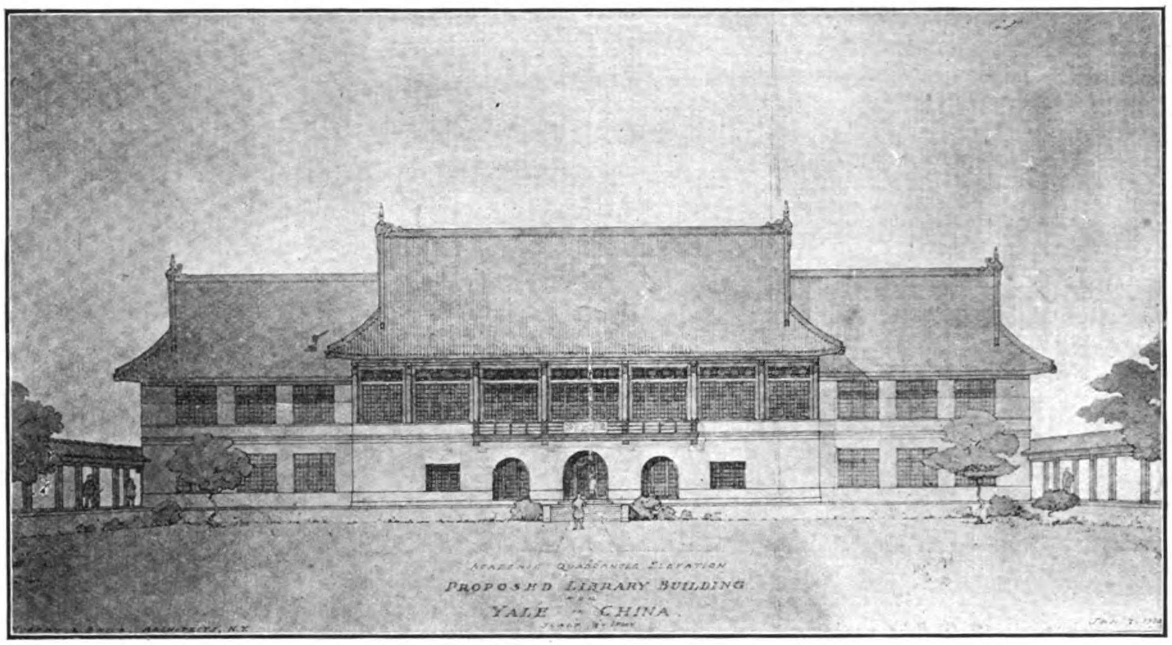
Hospital

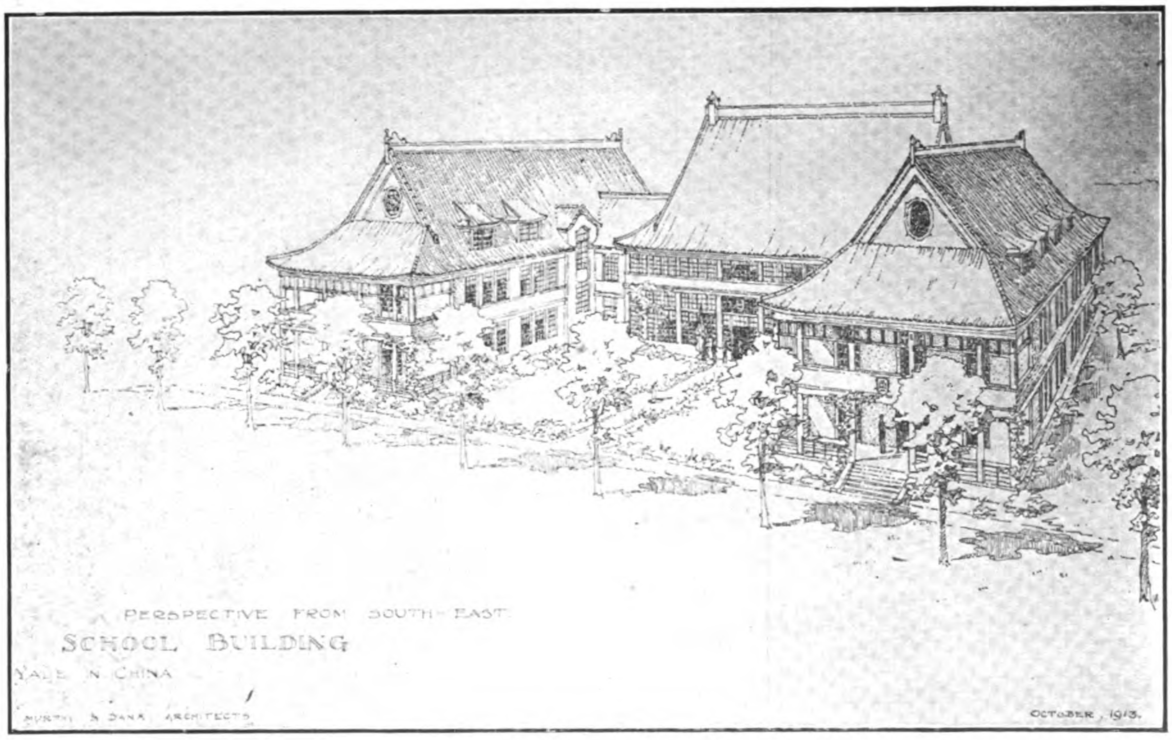
Dr. Edward H. Hume,
Dr. Alfred C. Reed,
Dr. T. M. Li,
Dr. T. L. Li,
Miss Nina D. Gage,
Miss Beatrice Farnsworth,

History of the Buildings

From another source we learn that until a few years ago, owing to financial disabilities, the "Yale-in-China" movement was compelled to get along as best it could in cramped temporary quarters within the city wall. The work it had accomplished, however, had been so strikingly successful, and had made for Yale so good a reputation among the Chinese, that the authorities in America began to realise that more support was needed and deserved. A movement was consequently started to raise funds to buy a suitable area of ground upon which could be erected a modern and up-to-date plant for the work. This was soon accomplished and enough money has now been raised, in addition, for the construction of several of the buildings, through a large number of individual subscriptions from Yale graduates; while the funds for erecting and equipping the hospital have been generously contributed by a single Yale graduate. The donor of the hospital employed Mr. James Gamble Rogers, Yale, '89, of New York, as his architect; while, for the College group and for the Professors' houses, etc., the Yale Foreign Missionary Society engaged as its architects Messrs. Murphy and Dana, of New York. Mr. Murphy is a graduate of Yale in the class of 1899; while both Mr. Murphy and Mr. Dana hold honorary degrees from the Yale Art School.

After something over a year's study, the plans were advanced to the stage where actual working drawings could be prepared; and in May, 1913, at the suggestion of Messrs. Murphy and Dana, Mr. Stanley Wilson was sent to Changsha from New York to assemble the necessary data in regard to costs, materials, and other essentials, and to perfect the working organisation at Changsha. Mr. Wilson returned to New York in August, 1913, and upon the valuable data he was able to collect





the architects completed the working drawings for the various buildings. In December Mr. Wilson returned to Changsha and took up his work as Supervising Architect in charge of construction.

Mr. Henry Killam Murphy, of the firm of Messrs. Murphy and Dana, has just completed a visit of inspection to Changsha; and as a result of his study of conditions on the site found it advantageous to make some important changes in the arrangement of the College group and Professors' residences. On May 29, 1914, the corner stone of the first Dormitory building was laid by Mr. Roger S. Greene, ex-Consul-General at Hankow, at present acting as a member of the China Medical Commission of the Rockefeller Foundation.

A great deal of study has been devoted to the choice of a style for the "Yale-in-China" group; and the decision to use a modern adaptation of the traditional Chinese style of architecture was made only after most careful consideration of the objections raised to it in certain quarters. It was felt that in addition to the educational, medical, and religious objectives of the Yale movement there was also an opportunity for good in the buildings themselves, by showing the Chinese the possibilities of preserving their architectural heritage in a group of buildings embodying the most modern American ideas of plan and construction. As will be seen from the accompanying illustrations, Messrs. Murphy and Dana have followed the more restrained architecture of the north of China, as exemplified in and around Peking, rather than the exaggerated features found in the south. Most of the elaborate ornamentation found in the temples from which the architects have taken their inspiration has been omitted; but by relying upon careful study of proportion, mass and color, it is hoped to preserve

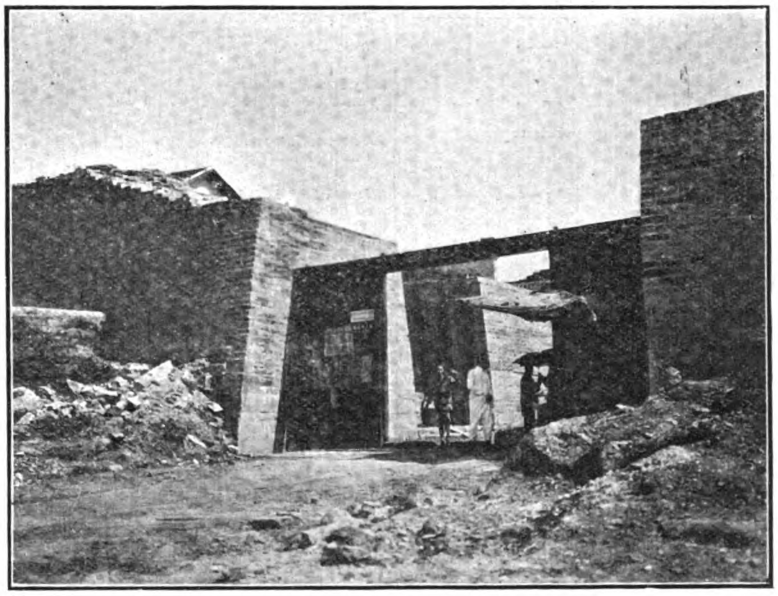
Bottom Row: Dr. Hume, Miss Farnsworth, Mrs. Chang, Miss Gage and Dr. Yen. Top Row: Dr. Li, Miss Wu, Dr. Frost, Miss Wang, Dr. Reed, Miss Yen, Dr. Li.

the spirit of the Chinese traditions, and yet keep the cost of erection down to a point which will make it possible for the Chinese themselves to use the Yale buildings as models for their own future work.

The site upon which the buildings are being erected consists of about twenty acres situated outside the North Gate of Changsha, on rather high land, and with a fine view of the river and of the beautiful country in the vicinity. As is shown by the accompanying drawing of the lay-out of the buildings, the orientation adopted differs from that followed in many similar institutions; the buildings running North and South instead of East and West. This plan was adopted after careful study of the meteorological conditions, etc., in view of the necessity of obtaining the fullest value from the sun; as in winter time, when the College has its longest session, the cold and damp are excessive. In the worst months of the summer the College will be in vacation, so the matter of obtaining the maximum of ventilation is considered less important than that of securing the minimum of dampness and cold. The main entrance to the College group will be from the River front. There will be two quadrangles separated by the great Library Building; the first comprising the four Dormitories, the second School Building, the Laboratory and the Chapel; while at the rear of the whole group, furthest from the entrance, will be the Dining Hall. All the buildings will be connected by a covered way running around the four sides of the two quadrangles. Such a cloister is very desirable in a climate where protection is needed from long spells of rain and of great heat: and forms, as well, a most pleasing architectural feature. The Hospital, which is not shown on the plan, adjoins it on the South; whilst the Professors' residences, twelve in number, will be to the North and West. All the buildings will be of brick, with varicoloured Chinese tile roofs. The Hospital will be fire-proof throughout. As far as possible, local material and labour will be used; but the most approved and up-to-date methods of construction will be followed. To prevent the incursion of white ants, a pest which wreaks havoc with all timber, special precautions in the shape of concrete protections are being used. The Dormitory, which is now being built, is a little over one hundred feet long by about forty feet wide. It will be about two and one-half storeys high and will accommodate about 100 boys. The Library will have the open shelf system, arranged in alcoves. The Chapel will seat 450. All the buildings will be fitted with complete sanitary conveniences, and with electric light; and a modern scientific sewage disposal plant will be installed.

Most of the buildings now in course of construction will be ready to open by September 1915; and it is hoped that money will be available to complete the whole group within the next five or six years.

Owing to the necessarily restricted finances of most institutions of this kind, buildings erected with mission funds have often been so poorly planned and constructed, that they have had to bear maintenance charges out of all proportion to their original cost. The Yale Mission at Changsha are trying to avoid this, and to expend their funds upon a purely business basis; and have instructed their architects to produce the most substantial buildings possible. In this respect, as in others, it is hoped that "Yale-in-China" may serve as a model not only for the Chinese but for all who may be interested in the erection of educational institutions in the East.



Breaking down Changsha's old wall. One of the six new gates cut through the old wall since the Revolution.

PROPOSED EXTENSION OF DAIREN WATERWORKS

As previously reported, says the *Manchuria Daily News*, the proposed extension of the Dairen City Waterworks, work on which was commenced recently on a five years' programme, entailing the total outlay of Y1,290,000 inclusive of Y300,000 for the present ficlas year, is designed upon the following plan:—

Bottom of reservoir..........	204 ft. above sea-level.
Length of dam..............	720 ft.
Width	12 ft. on top. 67 ft. at base.
Top of dam	279 ft. above sea-level.
Highest water mark	274 ft. ,, ,,
Storage capacity	4,288,499 tons.

Area of surface of reservoir about 180,000 *tsubo*.

Dam to be constructed of concrete.

Equipped with conducting tower, 14 ft. in diameter, a vertical conducting iron pipe, 22 in. in diameter, and a flushing pipe, 30 in. in diameter.

The above-mentioned plan aims at raising the supply capacity to sufficient for 150,000 people. According to this plan the daily supply of 15,000 tons of water may be kept up for 260 days.

Of the total outlay, Y420,000 is set aside for the reconstruction of the dam, the rest being intended for the conducting pipes, the installations at the water-source, etc.

The construction of the light rail line for the transportation of building materials is expected to be finished shortly. The excavation of the foundation of the dam is now in progress.

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VOL. XI. SHANGHAI AND MANILA, AUGUST, 1914 No. 3

THE DEVELOPMENT OF DAIREN

ACTIVITIES OF THE SOUTH MANCHURIA RAILWAY

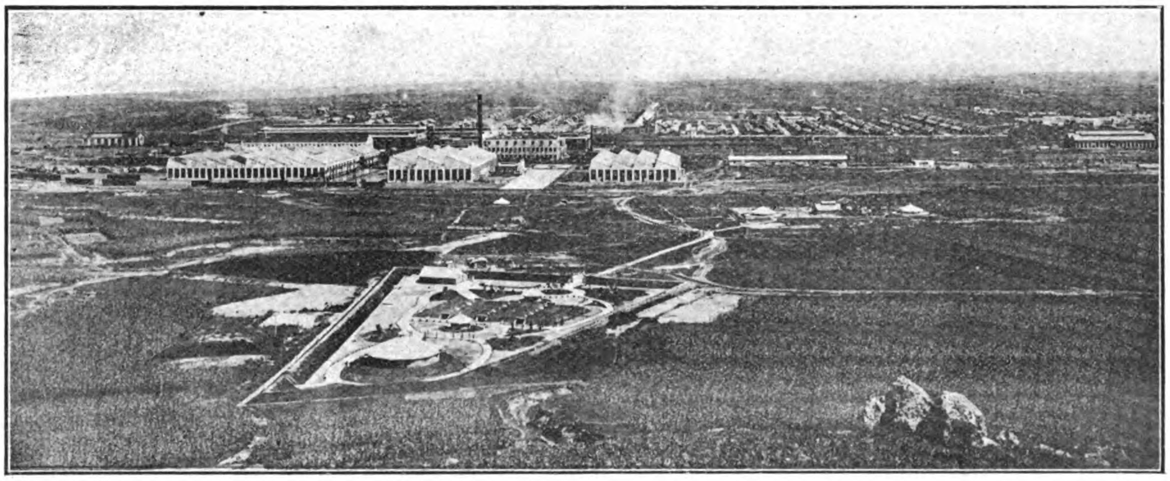
A visit to Dairen, Tairen, Tailen, Dalny or Dalni—as the port of the Japanese Leased Territory of Kwangtung is variously called—by anyone whose previous acquaintance with the town dated a decade back, would induce wonder and not a little admiration. The soul that animates Dairen is the South Manchuria Railway Company. In every direction signs of its activity are to be seen. Is it the huge million yen Yamato Hotel? By whom constructed and by whom to be operated? The South Manchuria Railway Company or Mantetsu, to give it its Japanese name! Is it the magnificent Shinto Temple now being constructed, the immense Railway Workshops at Shakako, the Schools, the Central Laboratory, the Hospitals, the Experimental Bean Mill, the Tramways, the sea-side resort at Hoshigaura, the Electric Light Plant, etc., all were brought into existence by this great railway company, which is one of the proudest monuments of Japan's organizing powers.

The South Manchuria Railway Company is a child of war. It will be remembered that at the conclusion of the Russo-Japanese War in 1905 by the Treaty of Portsmouth Japan acquired the railway through Manchuria from Changchun to Dalny and Port Arthur and all the branch lines, coal mines, etc. Japan also acquired all the rights formerly held by Russia in the railway zone and in the leased territory. The South Manchuria Railway Company was formally established on November 13, 1906 with Baron S. Goto as President. When he became Minister of Communications in July 1908 Mr. Z. Nakamura succeeded him as President of the Company and retained the position until the end of 1913 when he was succeeded by Dr. Nomura. The latter was retired by the Government in July, 1914 and Lieut.-General Baron Nakamura appointed in his stead.

The capital of the Company is Y200,000,000 of which the Japanese Government owns half. The amount of capital actually paid up to date is Y.60,000,000. The share of the Japanese Government is the assessed value of the railway lines, coal mines and other properties and rights acquired from Russia and handed over to the Company. Debentures to the value of Y117,156,000 have been issued.

The gauge of the main railway and branches when taken over was 3 feet 6 inches and the gauge of the Mukden-Antung line was 2 feet 8 inches. By June, 1908 the entire main line and the Fushun and Yingkou branches had been transformed to the standard gauge. The work of transforming the Mukden-Antung line to the standard gauge was begun in August, 1909 and was completed in November, 1911.

Adequately to deal with the numerous enterprises of the Company in a single article would be impossible, and we propose therefore to confine ourselves for the present to the Shakako Railway Works.



General View of Shakako

The Shakako Railway Workshops

The official opening of the workshops took place on November 23, 1911 when the leading residents and Government Officials of Dairen and Port Arthur were present. Mr. Z. Nakamura, the President, and Mr. S. Kunisawa, the Vice-President of the Railway Company, delivered opening addresses, and Mr. M. Yoshino, the Chief Mechanical Engineer, submitted a report on the progress of the workshops from the first cutting of the sod, to their completion, from which we take the following extract:—

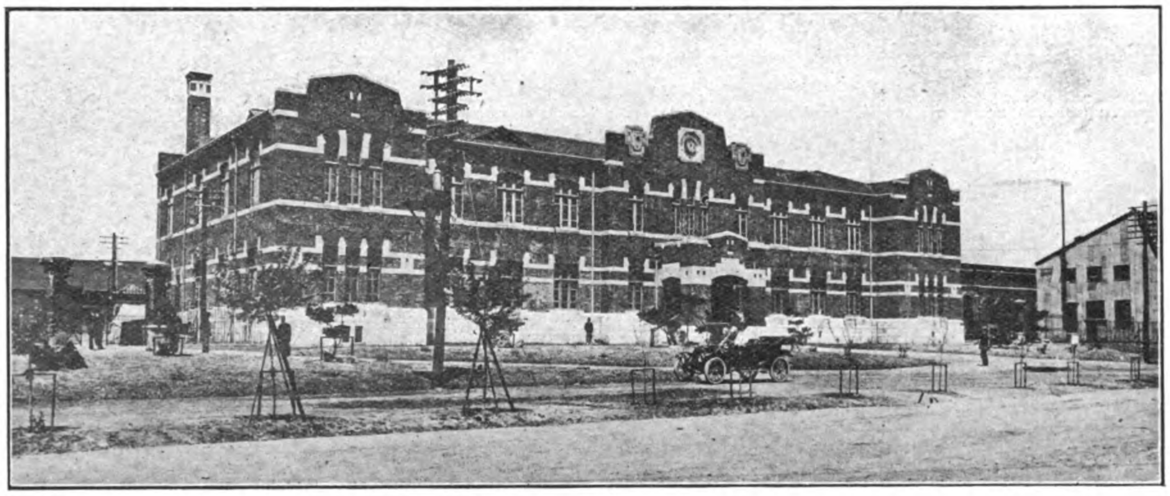
"The work of levelling up the ground was started in July, 1908. The foundation work of the Locomotive and Machine Shop and the Smith Shop was commenced in the following November. The erection of the steel structures for these shops was started in May of the following year and progressed satisfactorily.

"In January 1910, I was sent to England to place orders for the building materials for the remaining 8 large and 5 small buildings, and their main equipments.

"These materials were forwarded to Dairen with the utmost despatch, the first delivery arriving on board the S.S. "Promosius" in May of that year. The delivery was accomplished by 20 boats, the last of which arrived in August of 1911.

"The foundations for these buildings were laid down consecutively, the first being started in June and the last in December. It is a noteworthy fact that this foundation work was carried on through the rigour of winter, without a break—an unprecedented feat in this country, where the generally accepted idea has hitherto been that such foundation work could not be carried out during the winter months.

"Temporary stoppages were made in the progress on certain days when the work was threatened by an unusually severe frost, in order to cover up and protect the work.



The Administration Building and Offices.

"One by one the structures for the buildings were erected, beginning in August of last year (1910); as progress was made with each building, its equipments were installed.

"The whole enterprise was completed towards the end of last month (October 1911). The total expenditure was Gold Yen 4,387,437.017.

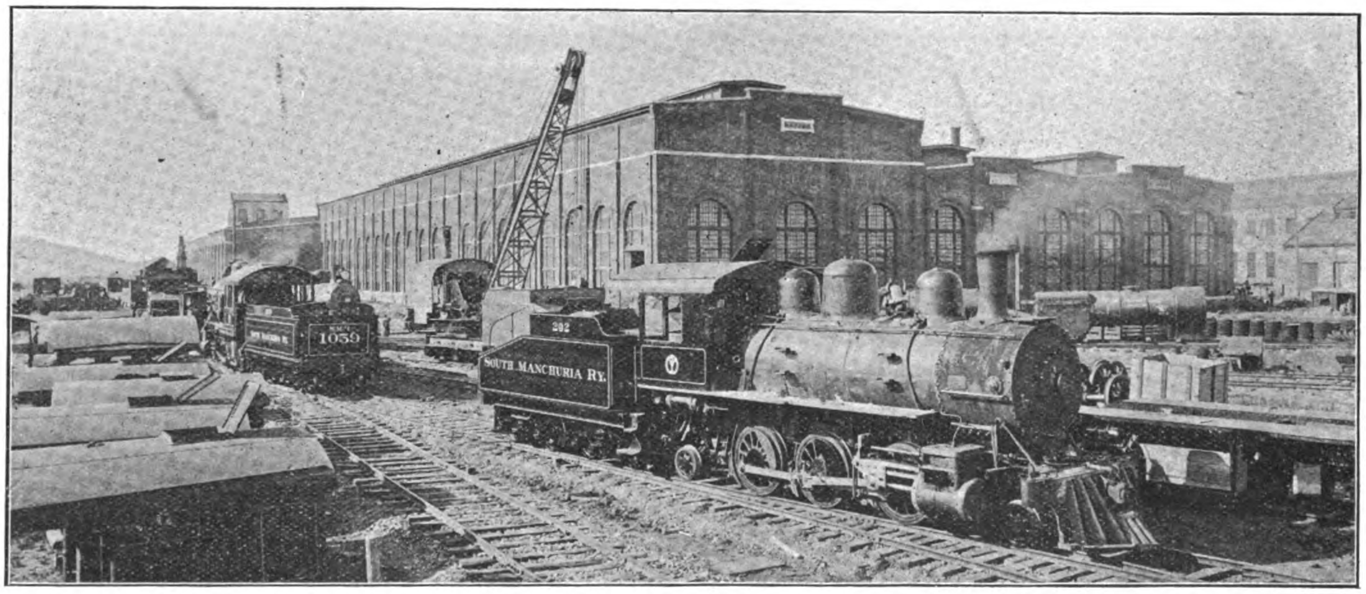
4 miles from Dairen (the starting point of the South Manchuria Railway) adjacent to the main line.

The area of the total enclosure of workshops and colony, is about 400 acres.

The workshops are laid out over an area of about 200 acres; the gross total area of the workshop buildings being a little less than 11 acres.

The Lay-Out comprises:—Locomotive and Machine Shop, Boiler Shop, Smith Shop, Foundry, Pattern Shop and Pattern and Foundry Stores, Power House, General Stores, Oil and Rubber Stores, Truck, Wheel and Brake Shop, Wood Mill and Freight Car Shop, Cabinet, Upholstering and Passenger Car Shop, Paint Shop, Timber Store, Timber Drying Kiln, Train Lighting Equipment Repairing House, Cleaning Pit House, Locomotive Weighing and Preparation Shed, Testing Laboratories, Fire Brigade and Night Watch's Station, Pumping Station, a 70 ft. Turntable, a 75 ft. Traverser and the General Office.

The Colony covers an area of about 200 acres. There have been built, 695 houses for the staff and workpeople employed at the workshops, 12 houses for the use of tradesmen, a Hospital,



View of the Workshops.

"The capacity of the completed workshops is such as to deal, at any one time, with the repair of about 27 Locomotives, 36 Carriages, and 130 Goods Cars.

"Even at this early date, there has already been made and turned out, a total of 3 First-Class and Dining Cars, 3 First-Class and Baggage Cars, 3 Baggage and Mail Cars for use on the Mukden-Corean Express Mail Train service and 17 Tram Cars, while 3 Sleeping Cars are at the present moment fast approaching completion."

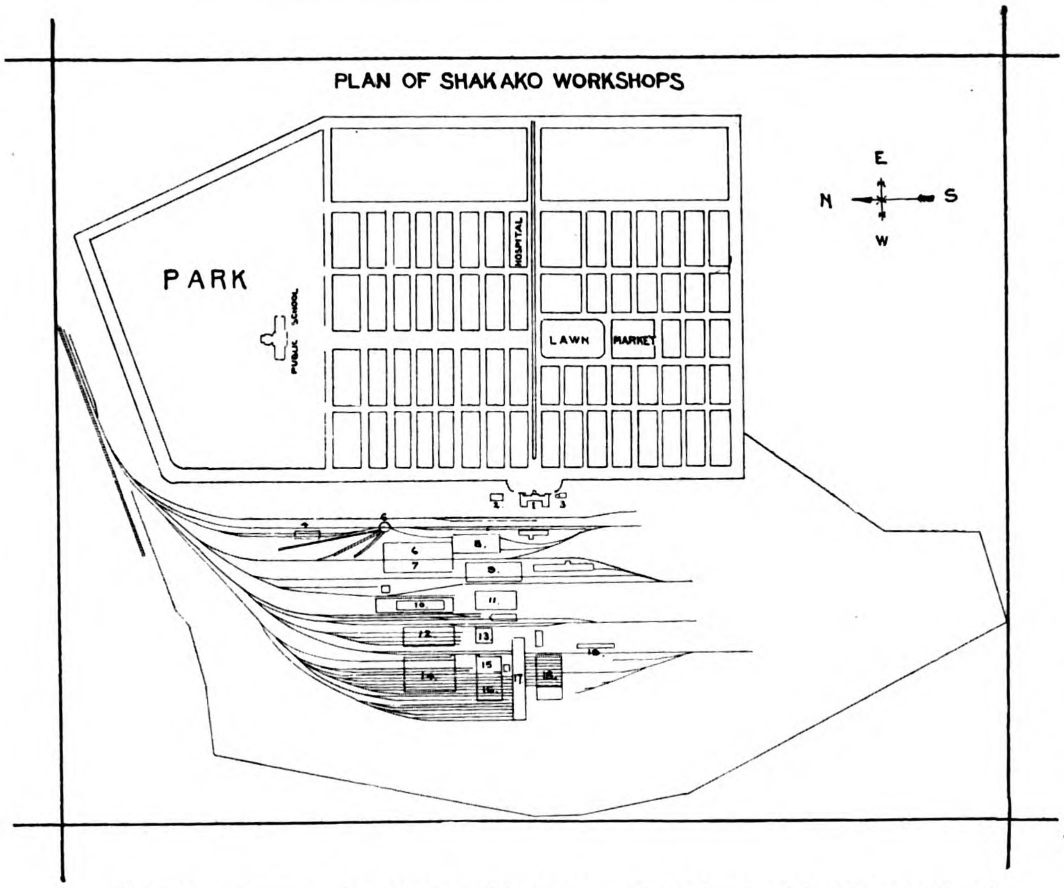
The Workshops and Colony are situated at Shakako, about

Children's School, Post and Telegraph Office, 3 small Public Baths and a Club-House.

All houses are lighted by electricity, and the better class houses have a hot water heating system installed. The water supply and drainage system has received careful attention, and has been well carried out.

The Electric Tramway from Dairen extends through the main road of the Colony, with its terminus in front of the main office building.

The Colony has a population, of about 2,600 Japanese.



This plan shows in the upper portion the town built by the Administration for the Workshops employees. A tram line, connecting with the main Dairen service, runs through the centre of the town. The key to the plan is as follows 1.—Administration Building, 2.—Testing Laboratory, 3.—Fire Brigade, 4.—Locomotive Weighing Shop, 5.—Turntable, 6.—Engine Repair Shop, 7.—Machine Shop, 8.—Boiler Shop, 9.—Smith Shop, 10.—General Stores, 11.—Foundry, 12.—Air Brake and Truck Repair Shop, 13.—Power House, 14.—Wood Mill and Freight Car Repair Shop, 15.—Cabinet Shop, 16.—Passenger Car Shop, 17.—Transfer Table, 18.—Paint Shop, 19.—Timber Store.

Ground Plan of the Workshops.—For so large a plant, the arrangement is very compact. The plan has been so drawn up as to group work of a similar character together, in order to minimise the distance through which materials and parts must be carried. Care has also been taken to provide everywhere for straight line movement of materials.

The buildings are spaced a sufficient distance apart to allow of good natural lighting.

The General Office is in the fore-ground of the lay-out, with its frontage east, and opposite the end of the main road through the Colony. The Testing Laboratories are 110'-0" to the north of the General Office, and the Fire Bridage and Night Watch's Station is 70'-0" to the south. The entrance for the workpeople is through turnstiles situated between the General Office and the latter station.

The Locomotive and Machine Shop is situated at the northeast corner of the group. The Boiler Shop is behind this at its south-east end, its main bay forming a continuation of the Locomotive Shop. The Smith Shop is 60'-0" west of the Boiler Shop, and 80'-0" south of the Machine Shop.

The Foundry is 60'-0" west of the Smith Shop, the Pattern Shop and Pattern and Foundry Stores being adjacent at its southwest corner.

The Power House, which is situated in a central position to the entire lay-out, is 115'-0" west of the Foundry, and has its north end in line with the north end of the Foundry.

The Cabinet, Upholstering and Passenger Car Shop is 90'-0" to the west of the Power House, with its north end in line with the north ends of the Power House and Foundry.

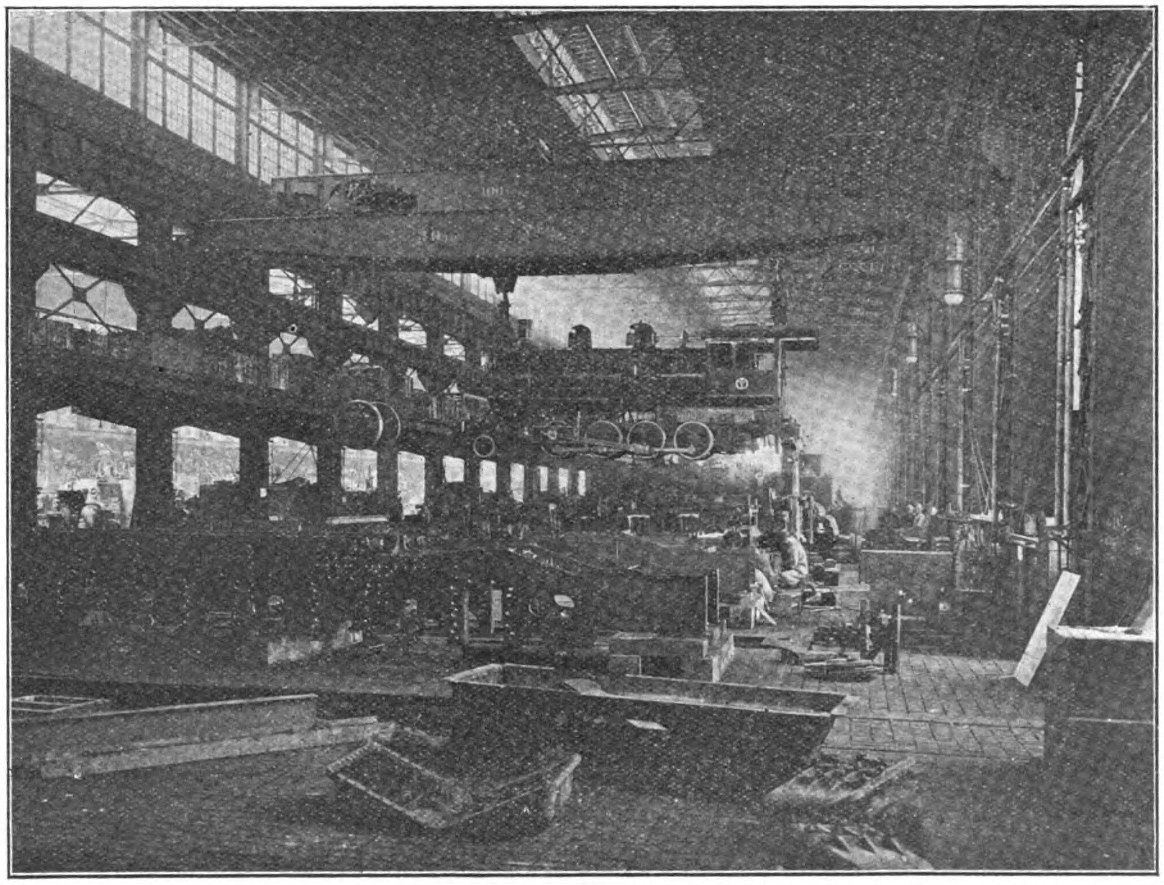
The Paint Shop is 220'-0" south of the Cabinet, Upholstering and Passenger Car Shop. The Timber Drying Kiln is situated 54'-5" to the east of the Paint Shop, in line with its north end.

The Electric Train-Lighting Equipment Repairing House is built close up to the south end of the Passenger Car Shop.

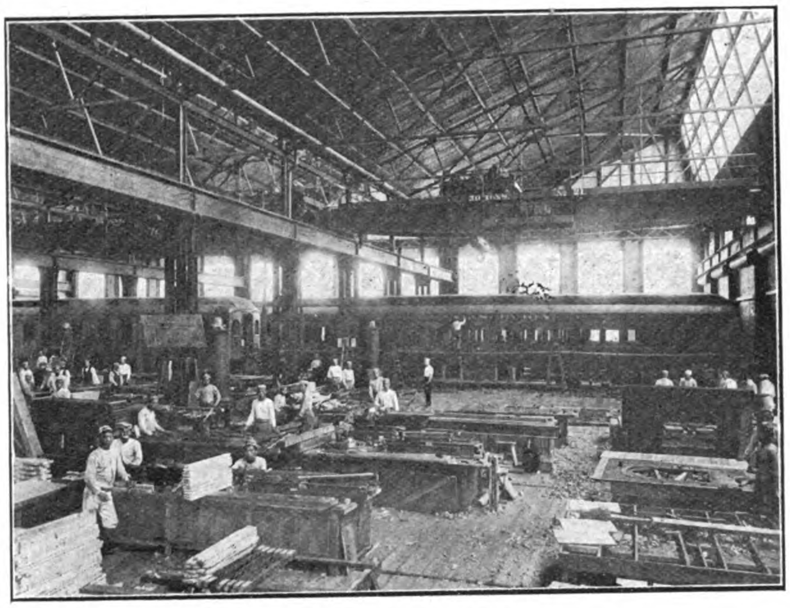
The 75 ft. Traverser operates between the Passenger Car Shop and the Paint Shop, and is also available for the Timber Drying Kiln, and the Train-Lighting Equipment Repairing House.

The Cleaning Pit House is situated to the west of the north end of the Locomotive and Machine Shop.

The General Stores is 180'-0" west of the Locomotive and Machine Shop, with its south end in line with the south end of the latter. The Oil



The Engine Shop.



The Passenger Car Shop.

and Rubber Store is built close to the south end of the General Stores.

To the west of the General Stores, and 100'-0" from it, is the Air-Brake, Wheel and Truck Shop with its south end in line with the south ends of the General Stores and Locomotive and Machine Shop. In the same line, 70'-0" to the west of the Air-Brake, Wheel and Truck Shop, is situated the Wood Mill and Freight Car Shop..

The 70'-0" Turntable is placed outside the north-east corner of the Locomotive and Machine Shop in a line with the northernmost of the Twenty-two Repairing Pits. The Locomotive Weighing and Preparation Shed is 417'-0" to the north of the Turntable.

The Pumping Station is located in an isolated position to the south-east of the Paint Shop.

The plan on page 87 shows the grouping of the workshops.

Construction of Buildings.—The Locomotive and Machine Shop, the Boiler Shop and the Smith Shop are each built of a steel skeleton structure with steel roof trusses, enclosed in independent brick walls.

The General Stores, Foundry, Pattern Shop and Pattern and Foundry Stores, Power House, Paint Shop, Cabinet, Upholstering and Passenger Car Shop, Wood Mill and Freight Car Shop, Air-Brake, Wheel and Truck Shop, Cleaning Pit House, Locomotive Weighing and Preparation Shed, Testing Laboratories and Fire Brigade and Night Watch's Station are built of steel skeleton structures with steel roof trusses. Their sides and ends are covered with a double thickness of corrugated galvanized sheet iron, 18 W.G. thick, laid with one corrugation side lap and 6 inches and lap, with rivetted fastenings. The air space which is left between the thicknesses, contains a layer of Bituminous Hair Felting, in order to maintain the buildings, as far as possible, cold-proof.

The building materials for the General Stores, Foundry, Pattern Shop and Pattern and Foundry Stores, Paint Shop, Cabinet, Upholstering and Passenger Car Shop, Wood Mill and Freight Car Shop, Air-Brake, Wheel and Truck Shop and the Boiler Shop were entirely supplied by Craven Bros. Ltd., Manchester, England. The materials for the Power House, Cleaning Pit House, Locomotive Weighing and Preparation Shed, Testing Laboratories, Fire Brigade and Night Watch's Station were supplied by the Patent Shaft and Axletree Co., Ltd., Wednesbury, England.

The roofs of the two latter groups of buildings are covered with 1¼" grooved and tongued Oregon Pine boards, upon which is placed one thickness of Crave's Patent Roofing Sheet, well nailed down and finished with a coating of mastic compound, spread over with fine sand.

The skylights are of Mellowes' Patent "Eclipse" type lead covered steel bars, manufactured by Mellowes & Co., Ltd., Sheffield. They are glazed with rough cast glass, ¼ inch thick, and provided, wherever necessary, with double flat ventilators fitted with Leggott's "Silens" opening gear.

The window sashes are the latest type "Fenestra" steel section, of the Critall Manufacturing Company. Each sash is provided with a ventilation area. All sashes over the doorway are fixed.

The lantern sashes in the Foundry, Boiler Shop and Power House are provided with opening gear, worked from the ground. All the sashes are glazed with ¼ inch rough cast glass.

Each of the aforementioned buildings, with the exception of the Cleaning Pit House, is provided with its own sanitary arrangements, which are accessible only from the interior of the building. The urinals and latrines were manufactured by Morrison, Ingram & Co., Manchester.

All the above buildings, with the exception of the General Stores, are fitted with Kinnear's Patent Roller Shutter Metal Doors, manufactured by A. L. Gibson & Co., London. In some cases additional sliding fire-proof doors are provided in the sides of the building. The General Store is fitted throughout with sliding fire-proof floors, provided with small wicket doors.

The skeleton steel structures for the Locomotive and Machine Shop and the Smith Shop were supplied by The Morgan Engineering Co., Ohio, U.S.A.

The roofs of these buildings are covered with groved and tongued Oregon Pine boards 1¼" thick, and laid with four thicknesses of tarred felt, cemented with molten pitch and well nailed down to the roof boards. Finally a coating of molten pitch was uniformly spread over the felt and covered with gravel sand.

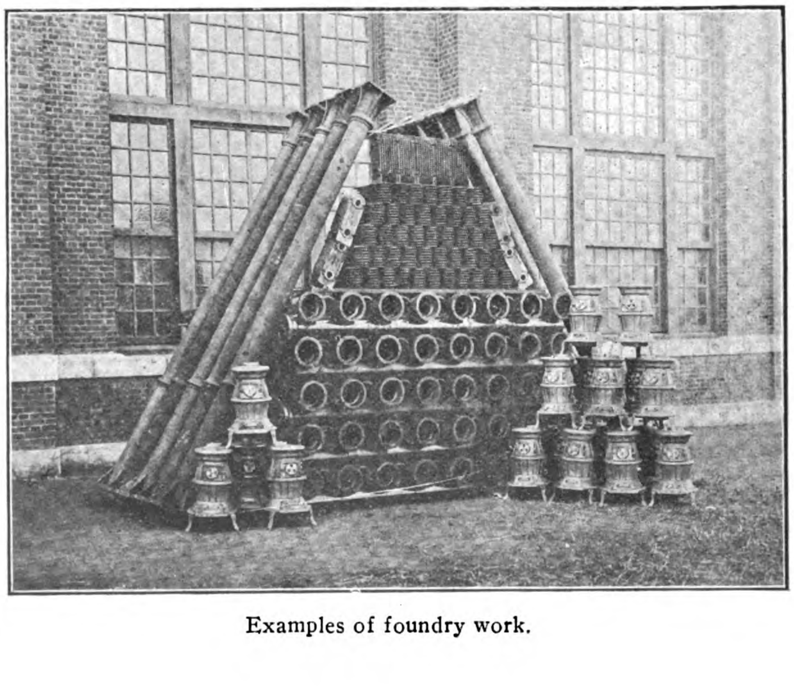
The skylights for these two buildings are made of galvanized metal bars, glazed with wire glass ¼ inch thick.

The window sashes are made of wood fitted in wooden frames in the brick walls. All the side and end windows are made with their lower one-third area to open upwards, with the provision of balancing weights.

The lantern sashes are made in a similar way to the window sashes, and are provided with opening gear worked from the floor. This opening gear was manufactured in the workshops themselves. The sashes are glazed with ¼ inch wired glass.

The doors are the aforementioned Kinnears's Patent Roller Shutter Metal Doors; some of them being provided with wicket floors. In the case of the Locomotive and Machine Shop there are also two wooden doors in the East wall, and one similar door in the West wall.

The Timber Drying Kiln, Train-Lighting Equipment Repairing House, and the Oil and Rubber Stores are built of brick walls with wood roof trusses. The roofs are covered



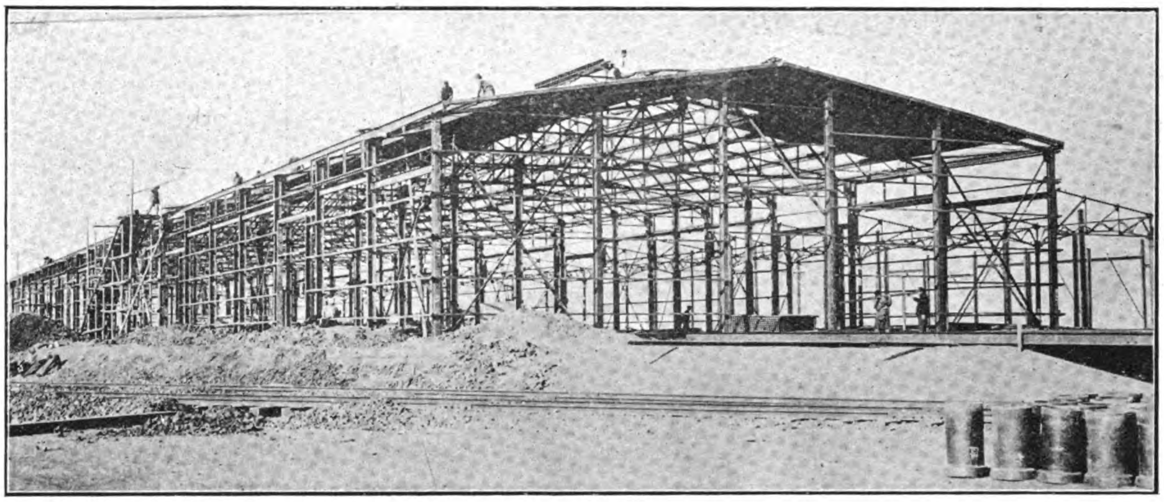
Examples of foundry work.

with ½ inch thick boards and one thickness of "Malsoid" roofing sheet. The windows have wooden sashes, glazed with common glass.

The Timber Drying Kiln has wooden doors and the other two buildings patent folding metal shutter doors.

Finally there are three smaller buildings; one built of wood and covered with corrugated sheeting, is used as the Timber Store, and two with wooden structures and corrugated sheeting walls and roof, one used as an auxiliary store and the other as the Workmen's Messroom.

Lighting.—The Lighting of all the workshops and the yard is accomplished by the lamps enumerated in the table below. The lamps are lighted by 25 cycle 100 volt alternating current transformed from the 2,100 volt main, coming from the Dairen Central Electric Station.



The Store House—now completed.

For the smaller units the Tungsten Filament Incandescent Lamp is used, and for the larger units, the Flame Arc Lamp. All the lamps were supplied by Allgemeine Electricitats Gesellschaft, Berlin.

	Tungsten 25 c.p.	Lamps 100 c.p.	Flame Arc Lamps 1,200 c.p.	Total K.W.
Loco. Shop...		32	11	8.7
Machine Shop.		86		8.6
Cleaning Shed		—	—	—
Loco. Weighing & Prep. Shed.		13		1.3
Boiler Shop.		18	8	5.8
Smith Shop.		6	18	9.6
Foundry		40	12	10.0
Pattern Shop.		27		2.7
General Stores		16		1.6
Truck Shop.		49		4.9
Wood Mill.		25		2.5
Freight Car Shop. ..		45		4.5
Passenger Car Shop. ..		33		3.3
Cabinet Shop.		18	3	3.3
Upholstery Shop... ..		5	4	2.5
Paint Shop.		48		4.8
Battery House.	3	3		0.4
Timber Drying Kiln. ..		—	—	—
Power House.		49		4.9
Pumping Station.. ..	9	3		0.5
Testing Laboratory. ..		16		1.6
Fire Bridage Station. ..	16			0.4
Switcher's Office. ..	2	3		0.4
General Office.	9	37		3.9
Yard.		29	4	4.9
Total:	39	601	60	91.1

Water Supply and Drainage System.—After careful investigation and search for water sources, it was decided to put in an independent water works for the supply of water to the Workshops and Colony.

The Pumping Station is situated at a distance of about 230 yards South West of the Paint Shop. Three wells are sunk in the immediate vicinity of the pumping station, and another about one mile distant. The wells are from 20 to 30 feet in diameter and from 25 to 42 feet deep.

A brick-lined concrete reservoir of 100,000 gallons capacity, consisting of two enclosed cavities measuring 18 feet wide × 40 feet long × 26 feet at the highest point, with an oval top and flat bottom, is built on a hillside in the background. The bottom of the reservoir is 204 feet 6 inches above the ground level of the workshops.

The Pumping Station equipment consists of:—Two sets of Rees Roturbo Pumps, each directly coupled to a 60 B.H.P. 3-phase motor for 220 volts 25 cycle A.C., with a suitable special double automatic liquid starter; both are mounted on a combination baseplate: one set of lightning arresters, two 50 K. V. A. unity - power-factor transformers, to transform 2,100 volts supply current to 220 volts, two high tension oil interrupters, two long tension interrupters, an electrically operated reservoir water level recorder, and all usual equipments mounted on switchboards.

The speed of the motors is rated at 1,440 revolutions per minute, and each pump is capable of delivering a maximum quantity of 400 gallons of water per minute, against a maximum total head of 275 feet, including suction and the pipe friction.

There are, on higher levels, a settling reservoir measuring 40 feet diameter × 14 feet deep (working depth), and filter bed measuring 60 feet × 90 feet × 8 feet deep (working depth). The bottom of the former is 28 feet 5 inches above the ground level of the workshops, and that of the latter is 16 feet 9 inches. Water pumped into the settling reservoir passes, by gravity, into the filter bed, and from there into a supplementary reservoir well, sunk close to the pumping station.

One of the Rees Roturbo Pumps described above, is used for pumping, through 6 inch piping, water from the supplementary reservoir well into the main reservoir, from whence it is supplied to the workshops and colony through an 8 inch main.

Waste waters from the different workshops are discharged, through glazed earthenware pipes, ranging from 4 inches to 18 inches in diameter, and are collected in a series of manholes connected by a main drain, 24 inches in diameter, discharging into an open gutter running along the eastern boundary of the work's enclosure.

Surface water, resulting from rainfalls, is also drained into the manholes above mentioned. Waste water from the houses in the Colony is similarly disposed of by underground drainage, and discharged into the same open gutter.

The building of a septic tank is under consideration, in order to improve the existing sanitary arrangements.

Suppliers of Equipment.—The following firms are the suppliers of the principal Machine Tools and various Equipments to Shakako Works.

(a) Locomotives and Machine Shop Machinery and Equipment.—Sir G. W. Armstrong, Whitworth & Co. Ltd., Alfred Herbert Ltd., Henry Broadbent Ltd., Joshua Buckton & Co., Ltd., J. Butler & Co., Francis Berry & Sons, Craven Bros., Ltd., Darling & Seller Ltd., George Swift & Sons, Hulse & Co., Ltd., Kendall & Gent Ltd., Luke & Spencer Ltd., William Muir & Co., Ltd., Maud & Turner, Beyer, Peacock & Co., Ltd., J. Perkinson & Son, Smith & Coventry Ltd., Sharp, Stewart & Co., Ltd., H. W. Ward & Co., Ltd., S. Worssam & Co., The American Tool

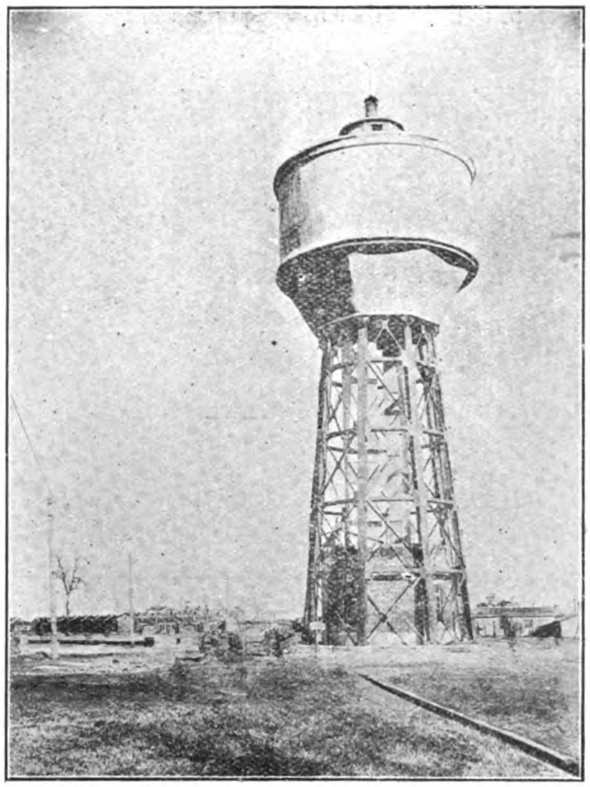
Works Co., The Acme Machinery Co., B. F. Barnes Co., The R. K. Le Blond Machine Tool Co., Brown and Sharp Manufacturing Co., Cambersburg Engineering Co., Curtis & Curtis Co., Flather Co., The Walter H. Foster Co., Hilles & Jones Co., Heald Machine Co., Niles-Bement-Pond Co., Putnam Machine Co., Petter & Johnston Machine Co., William Sellers & Co., Smith & Mills, Steptoe Shaper Co., Wiley & Russel Manufacturing Co., Wells Bros. Co. and J. E. Reinecker.

(b) Hydraulic Machinery.—Fielding & Platt Ltd.

(c) Wood-Working Machinery.—A. Ransome & Co. Ltd. and Thos. Robinson & Son Ltd.

(d) Boiler Shop Machinery.—Alldays & Onions Pneumatic Engineering Co. Ltd., B. F. Barnes Co., Francis Berry & Sons Ltd., Joshua Buckton & Co., Ltd., Campbells & Hunter Ltd., The Chicago Pneumatic Tool Co., Cleveland Punch & Sheer Works Co., Walter H. Foster Co., Greenwood & Batley Ltd., Alfred Herbert Ltd, James Keith & Blackman Co., Ltd., Kendall & Gent Ltd., Muenneth u. Knoechel, Luke & Spencer Ltd., Wm. Muir & Co., Ltd., Henry Pels & Co., Roberts Bros. and Joseph T. Ryerson & Son.

(e) Foundry Machinery and Equipment.—The Consolidated Pneumatic Tool Co., Ltd., Craven Bros., Ltd., James Evans & Co., Green & Co., J. W. Jackman & Co., Ltd., G. Kite & Co., The London Emery Works Co., The Morgan Crucible Co., Ltd., The Pneumatic Engineering Appliances Co., Ltd., Wm. Sellers & Co., Thwaite Bros. Ltd. and Whiting Foundry Equipment Co.



Water Tank.

(f) Smith Shop Machinery and Equipment.—Alldays & Onions Pneumatic Engineering Co., Ltd., The Ajax Manufacturing Co., Babcock & Wilcox Ltd., Brett's Patent Lifter Co., Ltd., Cochran & Co., Annan Ltd., Craven Bros., Ltd., Fielding & Platt Ltd., Henschel u. Sohn., James Keith & Blackman Co., Ltd., B. and S. Massey, Mitsubishi Dockyard & Engineering Co., Wm. Muir & Co., Ltd. and National Machinery Co.

(g) Wheel, Brake and Truck Shop.—The Acme Machinery Co., Alldays & Onions Pneumatic Engineering Co., Ltd., B. F. Barnes Co., Joshua Heap & Co., Ltd., James Keith & Blackman Co., Ltd., Kendall & Gent Ltd., B. and S. Massey, Wm. Muir & Co., Ltd., Walter Newbolds & Co., Ltd., Niles-Bement-Pond Co., Smith & Coventry Ltd., Wells Bros. Co. and Westinghouse Air Brake Co.

(h) Dynamo Engines, Generators, Air Compressor, Motors and Electric Equipments.—Allgemeine, Electricitats Gesellschaft, Bellis & Morcom Ltd., Dick, Kerr & Co., Ltd., Felten u. Guilleaume, General Electric Co., General Electric Co., Ltd., Greenwood & Batley Ltd., Ingersoll-Rand Co., Lancashire Dynamo & Motor Co., Ltd., Laurence, Scott & Co., Ltd, Mather & Platt, Ltd., Mitsubishi Dockyard & Engineering Works, Shibaura Engineering Works, Veritys Ltd., Vickers, Sons & Maxim Ltd. and Westinghouse Electric and Manufacturing Co.

(j) Boiler Plant. — Babcock & Wilcox.

(k) Pumping Plant.—The Rees Roturbo Manufacturing Co., Ltd.

(l) Stanlock Heating System.—Standard Engineering Co., Ltd.

(m) Automatic Sprinkler Installation.—Mather & Platt, Ltd.

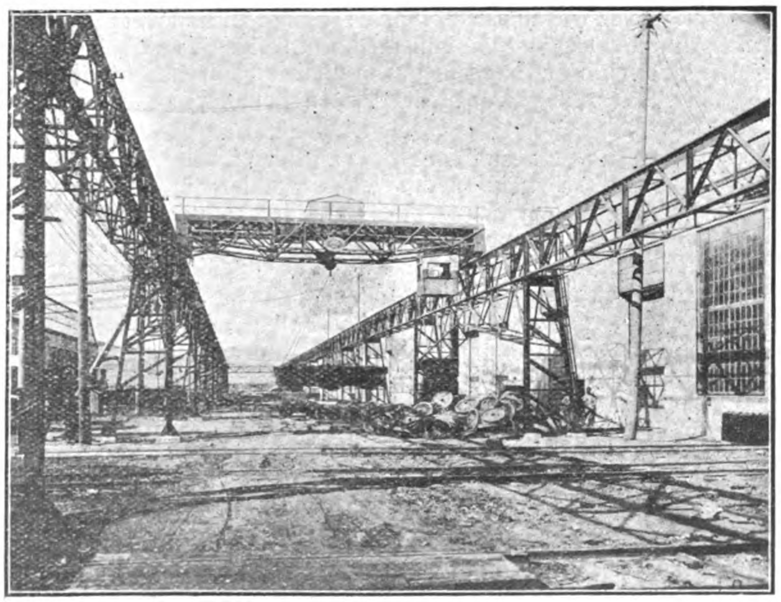
(n) Cranes, Lifts, Conveyors, Turntable and Traverser.—Babcock & Wilcox, Ltd., G. Booth & Sons, Ltd., A. Borsig, Brown Hoisting Machine Co., Cowan Sheldon Ltd., Craven Bros., Ltd., Herbert Morris & Bastert, Ltd., Patent Shaft & Axletree Co., Ltd., A. W. Penrose & Co., Ltd., Ransomes & Rapier, Ltd., Shaw Electric Crane Co. and Stothert and Pitt, Ltd.

(p) Building Material.—Craven Bros., Ltd., Markham & Co., Ltd., Crittall Manufacturing Co., Ltd., A. L. Gibson & Co., Ltd., The Morgan Engineering Co. and Patent Shaft and Axletree Co., Ltd.

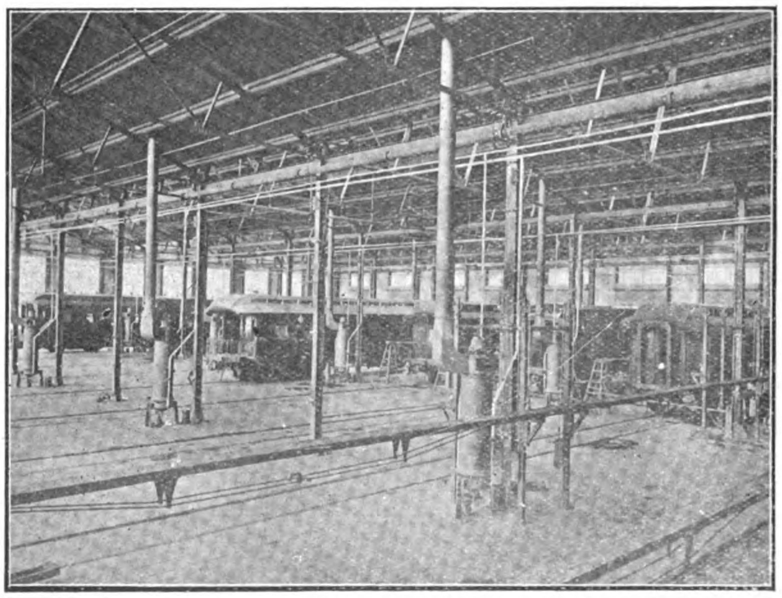
(q) Testing Machinery and Equipment.—W. H. Bailey & Co., Ltd,, Joshua Buckton & Co., Ltd., Edward G. Herbert Ltd., Hallwachs u. Co. and Tinius Olsen & Co.

(r) Locomotive Weighing Plant.—W. & T. Avery Ltd.

(s) Miscellaneous.—British Vacuum Cleaner Co. Ltd., W. Canning & Co. (Electro-Plating Plant.) Morison Ingram & Co., Ltd. (Sanitary Arrangements.) Shand Mason & Co. (Fire

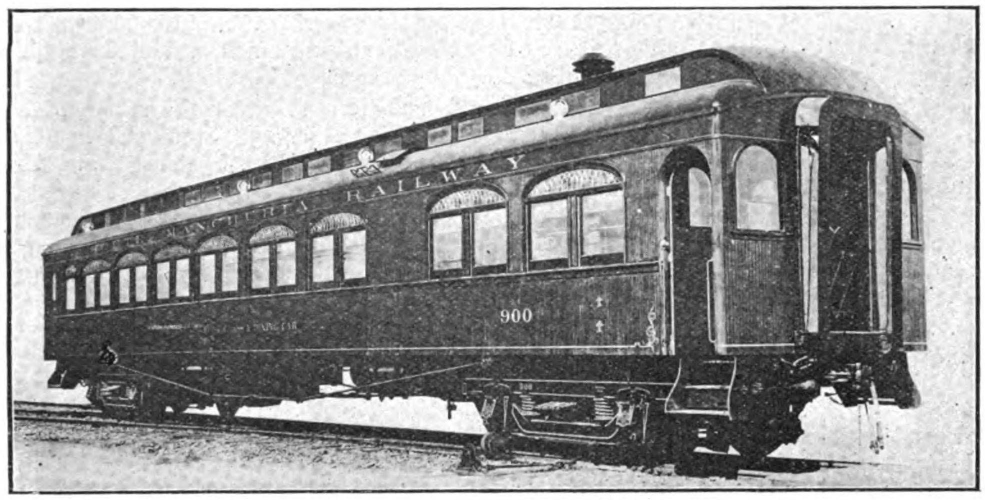


Overhead Traveller.



Paint Shop.

Engine.) Shanks & Co., Ltd. (Sanitary Arrangements.) The Synchronome Co. (Electric Clock System.) Torrance & Sons, Ltd. (Paint Mill.) The Valor Co., Ltd. (Oil Cabinet.) Rud., Otto Meyer. (Office Heating.)



Cranes and other Lifting and Conveying Appliances.—The conveyance of heavy articles, both indoors and outdoors, has received special attention and has been carried out in a most thorough and complete manner. The Overhead Crane System forms one of the most noticeable features of the workshops.

Full details of the Cranes, Conveyors and other Lifting Appliances may be gathered from the following table.

From the table showing the distribution of electric power in the different workshops, the following data have been deduced:—

	Total rated H. P. of motors used for power.	Approximated rated H.P. of motors per 100 sq. yards of floor area.	Rated H.P. of motors per workman employed.
Locomotive Shop.	408	118	3.264
Machine Shop.	632	107	2.603
Boiler Shop.	416	105	1.524
Smith Shop.	138	29	1.190
Foundry.	226	65	1.467
Pattern Shop.	36	51	1.800
Truck Shop.	255	69	2.040
Wood Mill.	310	145	5.167
Freight Car Shop.	114	20	0.648
Passenger Car Shop.	253	50	1.571
Paint Shop.	9.	2	0.128

The men employed, including both Japanese and Chinese workmen, who were present on December 21, 1911, totalled 1,665. The total rated horse power of motors installed throughout the workshops, is 2,907.5. By dividing the latter by the former, the average rated H.P. per workman employed, is 1,746.

The Power Plant.—The Boiler Plant was completely supplied by Babcock & Wilcox, Ltd., London. It consists of three batteries of water tube boilers, the particulars of which are as follows:—

Heating Surface	4,400 sq. ft.	each.
Grate Area (8'-0" × 12'-0")	96 sq. ft.	each.
Number of Sections	18	each.
Number of tubes in each section	11	
Diameter of tubes	4	inches.
Length of tubes	18	feet.
Steam and Water Drum — Diameter	4	feet.
Steam and Water Drum — Length	24	feet 3 inches.
Diameter of Stop Valve	7	inches.
Working Pressure	150	lbs. per sq. inch.

Each boiler is fitted with Babcock & Wilcox's patent Integral Superheater, each having 552 square feet of heating surface, consisting of 64 "U" tubes 1¼ inch diameter, and suitable for imparting 100 degree Fahrenheit of superheat to the steam generated in the boiler.

Babcock & Wilcox's patent Chain Grate Stoker is fitted to each boiler, each having a grate area of 96 square feet. A line of 3 inch shafting, driven, by an 8. H.P. motor, through an entirely enclosed worm reducing gear in an oil bath, transmits the motion to each individual grate, by means of a chain drive.

The speed of the motion of the grate can be varied from 6¼ feet to 25 feet per hour while the driving shaft is running at 50 revolutions per minute.

Five groups of Green's Patent Fuel Economiser, consisting of a total of 720 tubes, each tube 9 feet long and 4 9/16 inches in diameter, are fitted in the main smoke flue leading to the chimney, in a position between the boiler batteries and the partition wall. Two motors 2 H.P. and 1½ H.P. respectively, drive the selfacting triple scrapers.

There are three "Weir" vertical direct acting boiler food pumps, one having 9" water ram, 12" steam cylinder and 21" stroke, and the two others 8" water ram, 10" steam cylinder and 18" stroke.

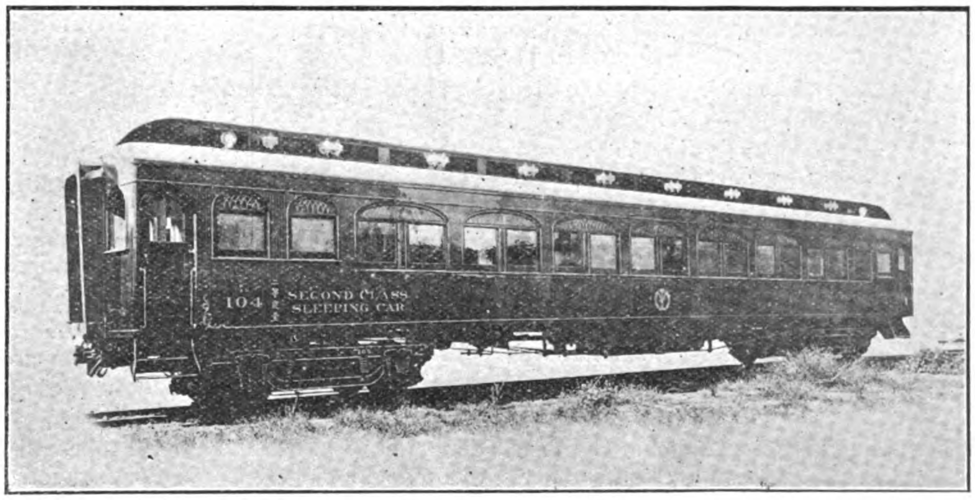
The chimney for the boiler plant is of the self-supported type, built of steel plates and standing upon a brickwork base. The diameter at the top is 9 feet, and at the bottom 16 feet, the chimney being coned for a distance of 20 feet from the base. The length of the steel part of the chimney is 150 feet, and the total height above ground is 157 feet.

The delivered coal drops into a receiving hopper, and then passes through a simplex valve into the automatic filler, and fills ihe buckets of the endless chain-bucket coal conveyor. It is then dumped from there into any of the six overhead coal bunkers in the boiler plant, from whence it is fed to the coal receiver for each grate, by the working of a pull chain,.

The ashes are raked to the front of the boilers, shoveiled, through the openings in the foot plate, into the buckets (as they pass the ash trench), by which they are raised and dumped into the ash bunker outside the boiler plant.

The coal conveyor is capable of handling about 20 tons of coal per hour, with a chain speed of 45 feet per minute; each bucket having a capacity of about one cubic foot. The conveyor is operated by one 3½ H.P. motor.

The coal receiving hopper, which has a capacity of about 10 tons, is covered with a grid having 3 inch square spaces.



The aggregate storage capacity of the overhead coal bunkers, heaped, amounts to about 380 tons, and that of the ash bunker, heaped, about 40 tons.

The main steam pipe—10" diameter—is arranged in the Engine Room running along the partition wall, and is connected with each boiler by 7" diameter piping.

In the Engine Room there are installed,—two sets of Steam Engines directly coupled to 400 kilowatt dynamos, two sets of 250 kilowatt Motor Generators, one Air Compressing Engine and one Fire Service Pump (described under the heading "Fire Protection").

The steam dynamos were supplied by Bellis & Morcom Ltd., Birmingham, and by Dick, Kerr & Co., Ltd., Preston.

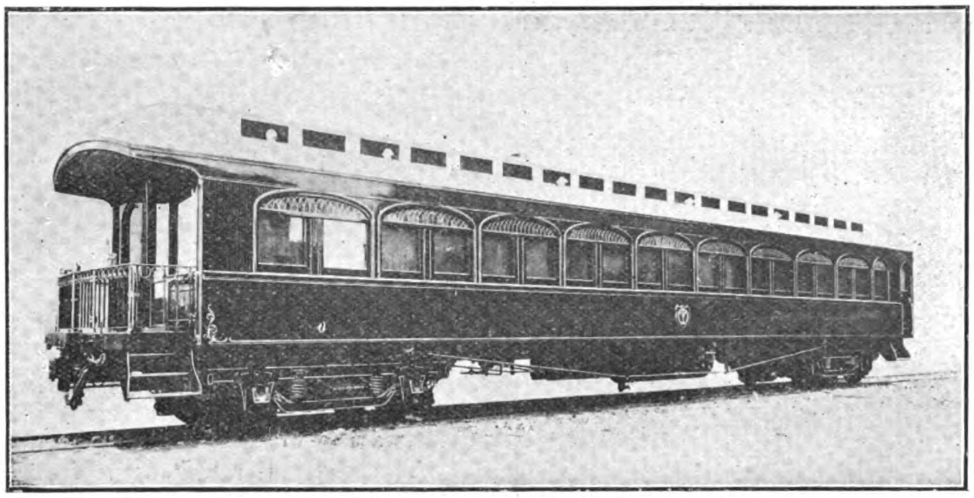
The Engines are Compound Two-Crank Two-Cylinder Vertical Enclosed Double-Acting Self-Lubricating High Speed Non-Condensing type, with high and low pressure cylinder diameters, 19 inches and 27 inches respectively, and 12 inches of stroke. They are capable of giving an output of 570 B.H.P., working at 575 revolutions per minute and 150 lbs. per sq. inch pressure.

The steam consumption per B.H.P. per hour under the above mentioned conditions, subject to the steam being superheated to 466° Fahrenheit at the engine throttle valve and non-condensing exhaust, is estimated at 18.1 lbs.

The Dynamos are Compound Wound Direct Current type, capable of giving an output of 400 kilowatts at 250 volts, 375 revolutions per minute.

The Motor Generator sets were manufactured by Shibaura Engineering Works, Tokyo, Japan. Each unit consists of one 370 B.H.P. 2,000 volts, Three-Phase, 25 Cycle Induction Motor coupled to two 125 kilowatt 250 volts Compound Wound Direct Current Dynamos, at each end of the same shaft.

Three sets receive the current from the Central Electric Station at Dairen, and, when the dynamos are worked in series, supply power to that portion of the Tramway System which lies South West of the Chinese town of Shokoshi; i.e., the tramways from Shokoshi to Shakako and to the seaside resort of Star Beach (Hoshigaura), and, when worked in parallel, supplement the workshop power.



Special Saloon Car.

When only a smaller power is wanted in the workshops, e.g., in the case of overtime work being carried on of an evening in a part of the shops, one of these 250 kilowatt motor-generators is operated, to economise the supply of power.

The switch boards, which are fitted along the West wall of the engine room, consist of:—

- 2 panels for the steam dynamo sets.
- 13 panels for the shop feeders.
- 6 panels for the motor-generators.
- 2 panels for the traction feeder.

The panels are adequately and completely equipped with all necessary equipments in accordance with the most modern practice.

The Air Compressing Engine was built by the Ingersoll-Sergeant Drill Co., New York. It is the Duplex Compound Steam and Compound Air Non-condensing type, with intercooler

It has:—

High Pressure Steam Cylinder	diameter 16 inches.
Low Pressure Steam Cylinder	diameter 24 inches.
High Pressure Air Cylinder	diameter 14¼ inches.
Low Pressure Air Cylinder	diameter 22¼ inches.
Stroke	18 inches.

It is capable of compressing air to 100 lbs. per square inch pressure at 80 to 100 lbs. pressure of steam; and, when operating at 120 revolutions per minute, it will have a piston displacement capacity of 925 cubic feet of free air per minute and with terminal air pressure of 100 lbs. per square inch, it will develope about 157 I.H.P. in its steam cylinders.

The Steam Generation is sufficient to cover the supplies to the above mentioned steam engines, the 325 "Stanlock" heater units (described under the heading "Heating System"), and to the steam hammers in the Smith Shop. For the two last named purposes, an underground closed main duct extends from east to west between the two groups of workshop buildings, viz.—The Freight Car Shop, Truck Shop, General Stores and Machine and Locomotive Shop on the north side, and the Passenger Car Shop, Power House, Foundry and Smith Shop on the south side. The separate buildings are reached by branch ducts from this main.

The greatest diameter of the steam main outgoing from the Power House is 9 inches, and that of the incoming return main, for the water of condensation, is 4 inches. Expansion bends are well provided throughout the pipings, and a gate valve is provided for each building, in order that the supply may be cut off from any building whenever desired.

These underground ducts also serve for the distribution of the Automatic Sprinkler Supply and Compressed Air Supply pipings; the latter having a main of 6 inch Mannesman tubes, and thereby being branched off to the several buildings.

The Power Supply throughout the whole workshops, as may be seen from the foregoing descriptions, is by 250 volts direct current, and all the electric motors are wound for 220 volts direct current, without exception.

Traverser. — The Traverser, which operates between the Passenger Car Shop and the Paint Shop, was built by Ransomes & Rapier Ltd., Ipswich, England. It is very strongly built, and capable of moving a sleeping car weighing 60 tons, at traversing speed of 150 feet per minute.

The following particulars may be worthy of mention:—

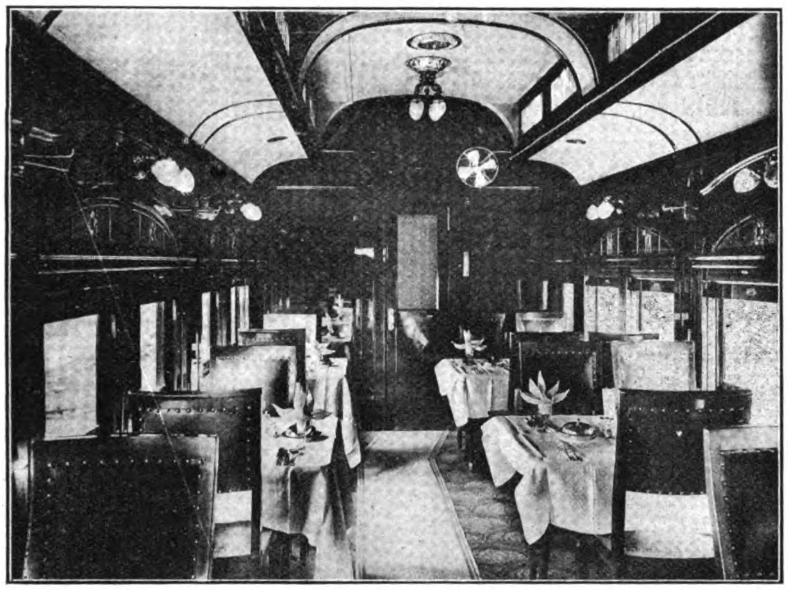
Length of Traverser Pit	521 feet 9 inches.
Width of Traverser Pit	75 „ 2 „
Length of Traverser Table	75 „ 0 „
Width over the ends of cross girders	18 „ 5 „
Width of Platform	15 „ 0 „
Wheel Base, Crosswise	12 „ 6 „
Wheel Base, Lengthwise pitch	9 „ 1½ „
Total Distance of Travel	502 „ 0 „
Depth from Rail on Traverser to Pit Rail	9 „
Number of Pit Runway Rails	9
Number of Carrying Wheels	18

The Traverser is driven by a 40 B.H.P. motor running at about 400 revolutions per minute. The motor and the mechanism are completely encased in a corrugated sheet iron house.

The current is collected from overhead wires by means of a steel tube collector pole and rigid arm collector fitted to one end of the traverser, the wires being about 18 feet above rail level. The overhead wiring is carried by seven poles and arms.

The North and South edges of the Traverser Pit are about 72 ft. 6 ins. distant from the walls of the Passenger Car Shop and Paint Shop respectively.

The Traverser is used for transferring cars between the two abovementioned shops and as a means of communication between the Wood Mill and the Timber Drying Kiln and also for carrying timber to and fromth e timber Drying Shed.



First Class Dining Car.

Locomotive Turntable.—The Locomotive Turntable—at the entrance to the Locomotive Shop—calls for a brief description.

The turntable is of the Shallow Pit type, built up of two inverted fish bellied main girders, and 12 sets of cross girders, braced longitudinally at two intermediate centre lines, coinciding to the centres of the track rails. It is hung to a cast steel centre, which is supported by an intermediate piece provided with 16 conical rollers; the latter is in turn supported by a pivot made of case-hardened steel, set in a heavy cast iron base. The end cross girders each carry two sets of balancing rollers.

The diameter of the table is 70 feet, and the depth of the circular roller track in the pit, is 2 feet 8½ inches below the table track rails.

The turntable was built by The Patent Shaft & Axletree Co., Wednesbury, England.

Fire Protection.—With a view to protecting the valuable property from fire, the Dry Pipe System of the "Grinell Patent Automatic Water Sprinkler," manufactured by Mather & Platt, Ltd., Manchester, has been provided in those buildings where combustible materials or articles are handled or stored.

The plant consists of five installations, as follows:—

General Stores, ...	366	Sprinkler Heads.
Pattern Shop and Stores ..	202	,, ,,
Paint Shop, ...	471	,, ,,
Passenger Car Shop, ...	517	,, ,,
Freight Car Shop and Wood Mill	710	,, ,,
Total of Sprinkler Heads	2,266	

Each installation is controlled by an alternate Hot and Dry Valve, by means of which the pipes can be filled with water in the summer months, or with compound air in the winter, when water would be liable to freeze.

In the event of an outbreak of fire, the sprinkler head nearest to the seat of the fire, is at once brought into motion by the heat of the fire itself.

The sprinkler heads are all made to fuse at a temperature of 155° Fahrenheit (68° C.). Immediately on the fusing of the sprinkler head, the water in the pipes is released; or in winter, when filled with compressed air, the air pressure is first released, and in its turn admits the water supply to the pipes. The water, passing out of the fused sprinkler head, falls on to the "Spreader" of the sprinkler and is "sprinkled" over a wide area, covering the seat of the outbreak of fire.

Each installation is provided with an automatic alarm gong (fitted on the outside of the building) which operates instantaneously with the fusing of a sprinkler head within the building. In addition, the whole system is connected with an electric alarm attachment and an indicator board, which are installed in the Fire Brigade Station.

The Electric Alarm Attachment operates automatically upon the opening of any sprinkler head throughout the system, and at the same time, the Indicator Board at once shows the firemen the exact location of the outbreak.

Three motor-driven air pumps are provided, for charging the installations with compressed air. These are installed one each in the Pattern Shop Ground Floor, the Wood Mill and the Passenger Car Shop.

There are two sources of water supply, one from the Work's independent water main, the other from a well sunk outside the Power House. One No. 4 side, "Underwriter" Quadruple-Acting Horizontal Steam Pump,—18" steam cylinders, 10" water rams and 12" stroke—installed in the Power Plant, is capable of pumping water at the rate of 1,000 gallons per minute, into a cast iron tank—12'6" x 12'6" x 8'-0"—having a capacity of 7,500 gallons. This tank is placed at the top of a steel structure erected close to the west wall of the Power Plant; the bottom of the tank being 81 feet above the ground.

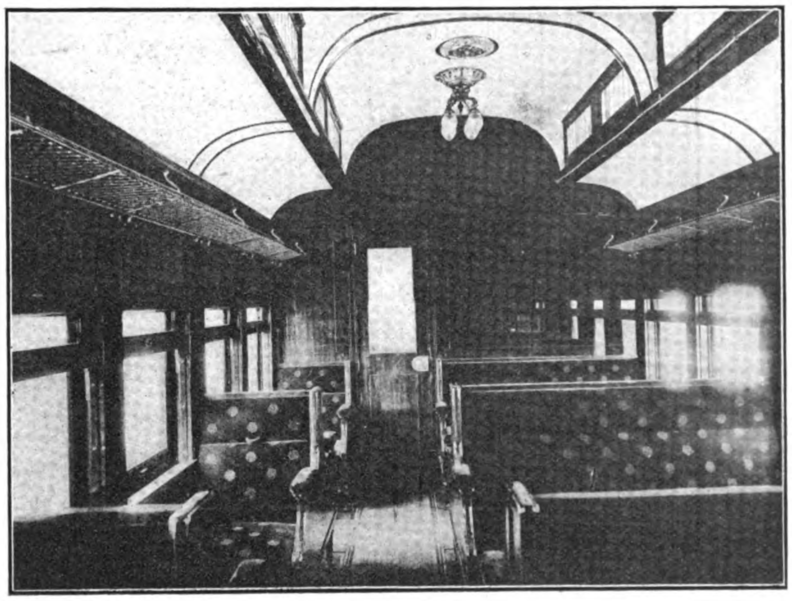
A 6" cast iron main, with branches of 4" pipes, supplies water from the tank to the different installations.

The gross cost of the installation amounts, on an average, to Gold Yen 1.68 per square yard of floor area of the five protected buildings.

One Sprinkler Head covers, on an average, 95.3 square feet of floor area.

In addition, and as an auxiliary to the Sprinkler System, a number of "Minimax" Chemical Hand Fire Extinguishers have been installed in the various shops and in the offices. By means of these, the workmen are able to cope with a fire occurring during working hours, in its incipient stages before the heat is sufficient to bring the sprinklers into action; thus saving water damage.

Each extinguisher is of 2 gallons capacity, and capable of projecting about 14 gallons of effervescing fluid to a distance of 35 feet in any direction.



First Class Passenger Compartment.

The Fire Brigade Station is equipped with a Light Steam Fire Engine, manufactured by Shand, Mason & Co., London, a two-wheeled Hand Hose Cart and six 100 feet lengths of hose.

The engine is capable of pumping 150 gallons of water per minute, throwing a $1\frac{3}{8}$" jet to a height of 130 feet.

Heating System.—Each workshop, with the exception only of the Smith Shop, Cleaning Pit House, Locomotive Weighing and Preparation Shed and Power House is adequately equipped with a heating installation.

The system of heating used throughout, is the "Stanlock" Heating System, of the Standard Engineering Company, London, and is so calculated in each shop, as to maintain an internal temperature of 60° Fahrenheit, even when the external temperature is 10° below Zero Fahrenheit.

Each "Stanlock" unit consists of a nest of solid drawn steel tubes, screwed into a circular cast iron chamber. The former is encased in a cylindrical sheet metal wall, and the latter is connected with a steam supply pipe, an outlet for the water of condensation and a drain cock.

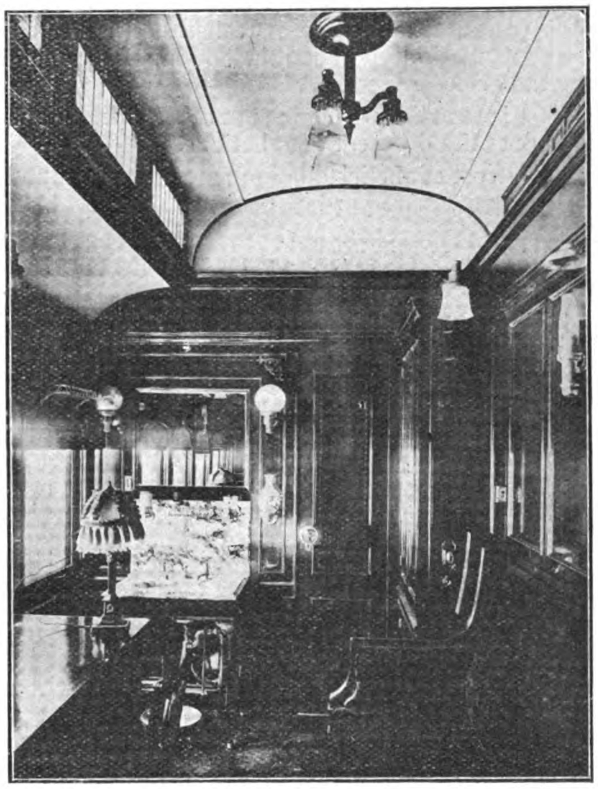
The water of condensation is collected in a steam trap and returned to the Boiler Plant by the action of the live steam pressure.

On the top of each such "Stanlock" unit, an electrically driven fan is fitted, driving the cold air into the nest of steam pipes, and expelling the heated air from the bottom opening of the heater.

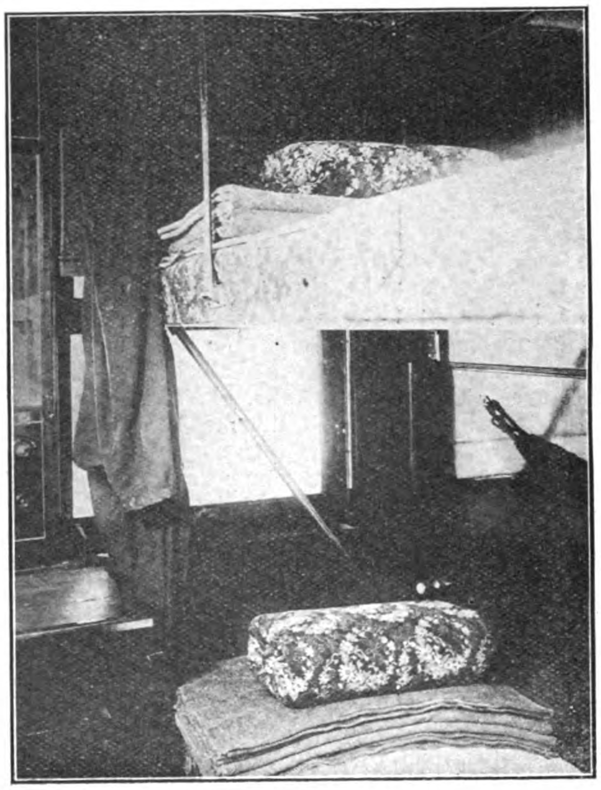
Buildings.		Size.	Number of units.	Floor Area covered by one Unit. (in square feet)
Locomotive and Machine Shop		1	88	958.6
Boiler Shop.		2	24	1,479.1
Foundry.		2	25	1,248.0
Pattern Shop	Ground Floor.	1	3	2,133.3
	First Floor.	1	3	2,133.3
	Second Floor.	1	6	1,066.6
Paint Shop.		2	35	1,291.4
Passenger Car Shop.		2	34	1,329.4
Freight Car Shop & Wood Mill.		1	53	1,328.3
Truck Shop.		1	32	1,200.0
General Stores.	Ground Floor.	1	8	1,250.0
	First Floor.	1	14	1,285.7
	Total		325	1,475.3

The total steam consumption for heating the shops, as shown in the foregoing table, is estimated at about 43,800 lbs. per hour. The total power for driving the motor fans is reckoned at 38 kilowatts.

The average cost of the installation, per one square yard of the net floor area of the buildings, amounts to, approximately,



Drawing room of special saloon.



Second Class Sleeping Car.

Gold Yen 4,290. This includes the cost of building outdoor ducts and branches, outdoor steam and return mains and valves, indoor pipings, and connections, and the cost of erection.

The Main Office Building is heated independently of the above mentioned system by means of low pressure steam.

Two Strebel's Sectional Boilers are installed in the basement of the building, each having the following capacity:—

Boiler Heating Surface,	115 square feet.
Water Contents,	96 U.S. gallons.

The boilers are worked at the low pressure of only 1.5 lbs. per square inch.

The steam and return mains are laid in a covered pit, provided in the ground floor.

A novel feature of this heating system is the draining of the steam risers. This is effected by means of special "U" shaped water loops, connecting the bottom of each riser with the return pipe.

The live steam is supplied at a pressure of about 100 lbs. per square inch.

The steam used for the heating system is supplied, by a system of underground steam mains, from the Central Boiler Plant, the water of condensation being returned thereto.

Each No. 1 unit will condense about 100 lbs. of steam per hour, and each No. 2 unit, about 150 lbs. per hour. The No. 1 unit will circulate about 2,000 cubic feet of air per hour, and the No. 2 unit, about 3,000 cubic feet per hour.

In the Paint Shop, each unit is connected with a fresh air intake pipe, extending through the roof; by means of which a supply of fresh air, to the extent of one change per hour, can be taken in even in the coldest weather. In this case each unit would condense about double the normal quantity of steam shown above.

The various workshops are equipped with the following heating units:—

50 ton Bottom Dumping Coal Car.

The water of condensation returns to the boilers by gravity.

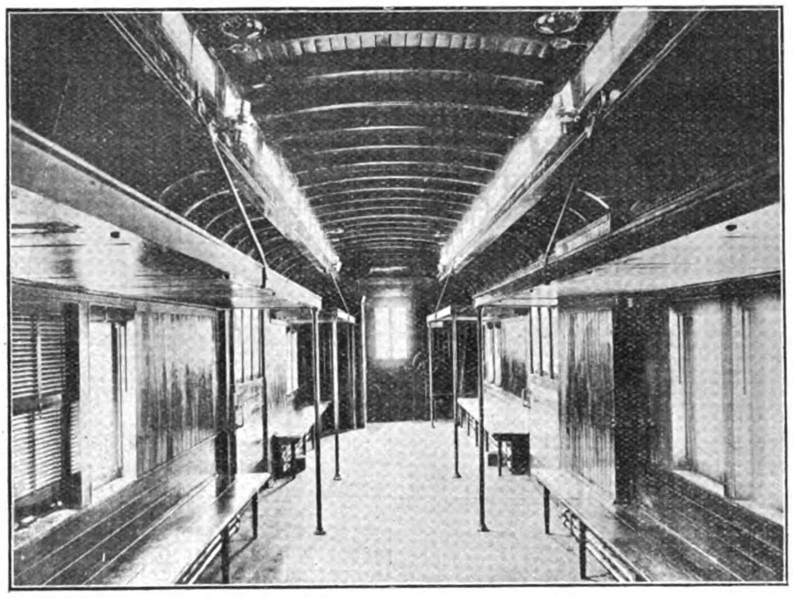
The total number of radiators is 46, having a total radiating surface of 2,645.5 square feet.

This plant was supplied by Rud. Otto Meyer, Hamburg, Germany.

MACHINES INSTALLED IN THE SHOPS

Locomotive Shop.—2—M.D. Emery Tool Grinders, 1—M.D. Hydraulic Bushing Press, and Cylinder Boring and Valve Seat Facing Tools, worked by Pneumatic power.

Locomotive Weighing and Preparation Shed.—1—Locomotive Weighing Machine with Automatic Aerostatic Dials.



Third Class Car constructed at the Workshop.

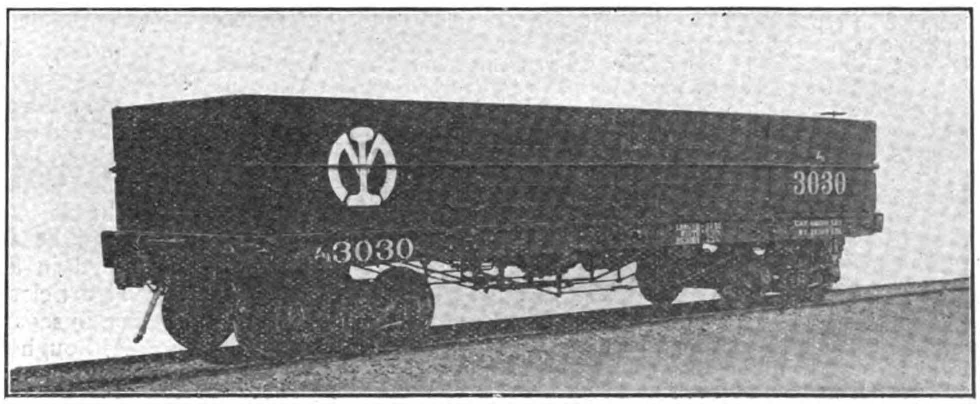
Boiler Shop. — 1 — M.D Plate Edge Planing Machine, 1—M.D. Pel's Punching and Shearing Machine, 3—B.D. Punching and Shearing Machines, 1—M.D. Vertical Plate Bending Roll, 2—B.D. Horizontal Plate Bending Rolls, 1—M.D. High Speed Disc Metal Cutting Machine, 1—M.D. Double Head Tube Plate Drilling Machine, 1 — M.D. Horizontal Boiler Shell Drilling Machine, 1—M.D. Full Universal Portable Radial Drilling Machine, 10—B.D. Drilling Machines (Assorted), 1—M.D. Boiler Tube Cleaning Machine, 1—B.D. Tube Welding Machine with Pneumatic Press, 1—B.D. Tube Sawing Machine, 1—B.D. Tube Cutting Machine, 1—B.D. Break Lathe, 1—B.D. Capstan Lathe, 1—M.D. Emery Tool Grinder, 12—Forge Fires, each with a M.D. Fan, 1—M.D. Smoke Exhaust Fan, 1—Plate Heating Furnace with M.D. Fan, 1—M.D. Hydraulic Power Pump, 1—Hydraulic Accumulator, 1—Hydraulic Flanging Press, 1—Hydraulic Stationary Rivetter, 3—Hydraulic Portable Rivetters, and assorted Pneumatic Tools.

Machine Shops.—3—M.D. Wheel Lathes, 1—B.D. Wheel Lathe, 1—M.D. Axle Lathe, 1—M.D. Hollow Mandrel Lathe, 7—M.D. Lathes, (assorted), 45—B.D. Lathes, (assorted), 25—B.D. Drilling Machines, (assorted), 1—M.D. Sensitive Drill, 1—M.D. Automatic Stay Bolt Drilling Machine, 1—M.D. Horizontal Cylinder Boring Machine, 1—M.D. Horizontal Boring, Facing and Milling Machine, 1—M.D. Double Head Vertical Boring and Turning Mill, 2—M.D. Milling Machines (assorted), 5—B.D. Milling Machines (assorted), 4—M.D. Planing Machines, 1—B.D. Planing Machine, 1—M.D. Shaping Machine, 7—B.D. Shaping Machines, 1—M.D. Slotting and Milling Machine, 1—B.D. Slotting and Milling Machine, 3—B.D. Slotting Machines, 5—B.D. Grinding Machines (assorted), 1—B.D. Punching and Shearing Machine, 1—M.D. Automatic Screwing Machine, 7—B.D. Screw Threading Machines, 1—M.D. Bar Reeling Machine, 1—M.D. Centering Machine, 2—M.D. Polishing Machines, 1—M.D. Metal Sawing Machine, 1—B.D. Metal Sawing Machine, 3—M.D. Grinders for Tools and Cutters, 9—B.D. Grinders for Tools and Cutters, 1—M.D. Hydraulic WheelPress, 1—Electric Tool-steel Tempering Furnace, 1—File Sharpener, 4—Copper Smith and Tool Smith Fires with M.D. Fans, 1—M.D. Smoke Exhaust Fan, 1—Electro-Plating Plant, 4 —B.D. Polishing Machines for Electro-Plating Plant and 1—B.D. Band Saw for Timber.

Smith Shop.—2—Scrap Heating Furnaces with each Babcock & Wilcox Water Tube Boilers mounted on top of the furnace, 1—Cochran Vertical Boiler, 7—Miscellaneous Furnaces, 41—Smith Fires, each with M.D. Fan, 6—Steam Hammers (assorted), 1—M.D. Pneumatic Power Hammer, 1—Battery of Steam Drop Stamp Forge, consisting of 3 Heads, 2—Hydraulic Presses, 1—B.D. Bolt and River Heading Machine, 1—M.D. Hot Nut Press, 1—M.D. Duplex Power Press, 1—B.D. Punching and Shearing Machine, 1—B.D. Emery Tool Grinder, 2—M.D. Spring Making Machines, 1—Spring Test Machine and 1—M.D. Smoke Exhaust Fan.

Foundry.—2—Cupolas, 1—Emergency Cupola with M.D. Fan, 1—Tilting Brass Melting Furnace with M.D. Fan, 1—Radio Brass Melting Furnace with M.D. Fan, 3—Mould and Core Drying Chambers, 1—Pipe Core Drying Pit with M.D. Fan, 2—B.D. Root's Blowers, 1—M.D. Scrap Breaking Plant, 1—M.D. Pig Iron Breaking Machine, 4—B.D. Loan Mills, 1—M.D. Sand Mixer, 1—Pneumatic Sand Riddler, 3—Pneumatic Moulding Machines, 1—Portable Mould Dryer with M.D. Fan, 1—M.D. Coke Breaker, 1—M.D. Fettling Machine, 1—B.D. Fettling Machine, 1—M.D. Tumbling Machine and 1—B.D. Tumbling Machine.

Pattern Shop.—1—M.D. Band Sawing Machine, 1—M.D. Circular Saw Bench, 1—M.D. Planing Machine, 1—M.D. Wood Turning Lathe, 2—Foot Power Wood Turning Lathes, 1—M.D. Fret Sawing Machine, 1—Hand Power Wood Trimmer, 1—Electric Clue Heater, 1—M.D. Dust Collecting Plant and 1—M. D. Ventilating Plant.



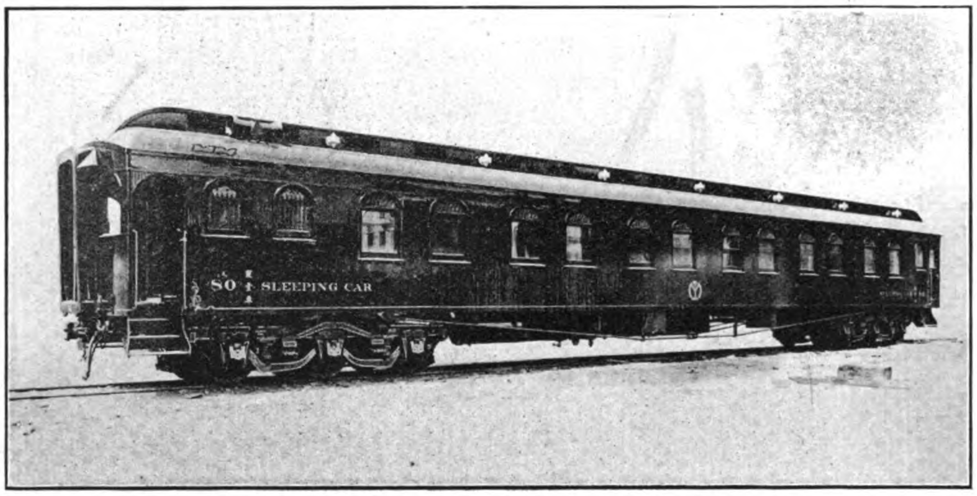
30 ton Side Dumping Open Car.

Timber Drying Kiln.—1—Triple Duct Drying System, with Fans for Cold Air and Moist Air combined in one shaft, driven by Motor; and a suitable steam Heating Chamber with a Cochran Boiler.

Paint Shop.—1—M.D. Paint Grinding Mill.

Passenger Car Shop, Cabinet Shop and Unholstering Dept.—1—Steam Veneer Press, 1—M.D. Band Sawing Machine, 1—M.D. Circular Saw Bench, 3—M.D. Planing Machines, 1—M.D. Boring Machine, 1—M.D. Tenoning Machine, 1—M.D. Horizontal Mortising Machine, 1—M.D. Wood Turning Lathe, 1—M.D. Sand Preparing Machine, 1—M.D. Circular Moulding Machine, 1—M.D. Scraping Machine, 1—M.D. Dust Collecting Plant, 1—M.D. Motor Ventilating Plant, 1—M.D. Vacuum Cleaner, 1—Hand Power Horse-hair Carding Machine and 5—Sewing Machines (assorted).

Freight Car Shop and Wood Mill.—1—M.D. Horizontal Log Band Sawing Machine, 1—M.D. Band Sawing Machine, 3—M.D. Circular Sawing Manchines, 3—M.D. Planing Machines, 1—6-Spindle Boring Machine with Hollow Chisel Mortising attachment, 2—M.D. Tenoning Machines, 1—M.D. Vertical Hollow Chisel Mortising Machine, 1—M.D. Band Saw Sharpening Machine, 3—B.D. Cutter Grinding Mahines, 2—B.D. Saw Sharpening Machines, 2—B.D. Band Saw Repairing Machines, 1—M.D. Dust Collecting Plant and 1—M.D. Motor Ventilating Plant.



First Class Sleeping Car.

Truck, Wheel and Brake Shop.—2—B.D. Vertical Boring and Turning Mills, 2—M.D. Centre Grip Wheel Lathes, 2—B.D. Wheel Lathes, 1—M.D. Axle Lathe, 1—M.D. Hydraulic Wheel Press, 1.—M.D. Pneumatic Power Hammer, for Tyre Fastening, 5—B.D. Drilling Machines, 3—B.D. Lathes, 1—B.D. Break Lathe, 1—B.D. Punching and Shearing Machine, 1—B.D. Shaping Machine, 7—B.D. Screw Threading Machines, 1—M.D. Pipe Threading Machine, 10—Smith Fires, each with M.D. Fan, 1—Tyre Heating Furnace burning oil Fuel, with M.D. Fan and 2—Air Brake Triple Valve Testers.

General Stores.—M.D. Metal Sawing Machine.

Power House.—2—400 KW. Dynamos directly coupled to Vertical Compound Non-condensing Steam Engines, 2—250 KW. Motor Generators, 1—Set of Switch Boards, 1—Air Compressor, 1—Steam Fire-Service Pump, 3—Batteries of Babcock & Wilcox Water Tube Boilers, with Chain Grate Mechanical Stokers, Coal and Ash Conveyor, Fuel Economiser, Water Softening Plant & Co. Recorder Attachment and 3—Boiler Feed Steam Pumps.

Testing Laboratory.—1—Hydraulic Material Testing Machine for Tensile, Compression, Bending and Shearing Tests, 1—Hand Power Torsion Testing Machine, 1—Prinnel Ball Testing Machine, 1—B.D. Lubricating-Oil Testing Machine, 1—M.D. Cylinder-Oil Testing Machine, 1—B.D. File Testing Machine, 1—Combined Pressure Gauge and Vacuum Gauge Tester, 1—B.D. Lathe, 1—B.D. Milling Machine, 1—B.D. Hydraulic Power Pump and an equipment for Chemical Tests.

Fire Bridge Station.—Portable Fire Engine and 1—Hand Power Fire Pump.

NOTE.—M.D. denotes that the machine is driven by a Motor Independently.

B.D. denotes that the machine is driven by a Belt and grouped with other machines; all being driven by a common motor.

THE PEKING SYNDICATE.

The Board of the Syndicate gives the following information regarding questions in connexion with the Shansi oil concessions since the annual meeting:

Pursuant to the China (Amendment) Order in Council, 1913, which requires that companies incorporated in the United Kingdom, and carrying on business in China, shall be registered at the Consulate of the district in which their chief local office is situated, the Peking Syndicate has been registered at H. B. M's Consulate-General in Tientsin. Statements having appeared in the newspapers that foreign companies were being given, or, at least, were applying for, exclusive rights on the oil and other mineral deposits of the province of Shansi, the directors called the attention of the Foreign Office to the agreement between the Shansi Bureau of Trade and the Peking Syndicate, dated January 21, 1908, for the redemption of the Shansi concession, a clause of which stipulates in substance that no arrangement can be made in future with foreign capitalists for the financing of a mineral enterprise without the Peking Syndicate being approached in the first instance. The operations of reopening pit No. 4 have been proceeding satisfactorily. The output has now reached about 13,300 tons per fortnight; the output immediately preceding the inundation of water (September 1912) had been 13,367 tons per fortnight. A fall in sales is due partly to the necessity of readjusting the whole commercial department on new lines and partly to the abnormally warm weather experienced in the winter months. An agreement has been entered into for the transportation of coal by water from Taokou to Tientsin at a considerable reduction of the rates formerly charged. The briquette-making plant, after remaining idle during the winter months, has been started again.

A prospecting, or development, department has been formed for the purpose of extending the Syndicate's operations, investigating business propositions, and tendering for either mining or constructional engineering work of all kinds. An arrangement has already been made through this new department with the Tun Hsing Sino Foreign Coal Mining Company, Ltd., for boring at their mines at Mentakou, near Peking.

The £800,000 of the Chinese Imperial Government Honan Railway 5 per cent. gold loan of 1905 has been successfully offered for sale for the purpose of re-investing funds in Chinese Government Treasury Bonds at a higher rate of interest. Part of the company's participation in the Banque Industrielle de Chine has been realized at a substantial profit. The Syndicate has taken a participation of 10 per cent. in the company to be established for the construction and maintenance of tramways, electrical lighting, and waterworks in Peking, which have been entrusted to the Banque Industrielle de Chine. The Board's fixed policy is to work in close touch and harmony with the Chinese authorities.

UNITED STATES STEEL PRODUCTS CO.

The third (1914) edition of the General Catalogue of the United States Steel Products Co., is worthy of the Company responsible for its publication. From a typographical point of view alone it is noteworthy, as it is excellently printed in clear type and the illustrations are splendidly reproduced. There are in all 615 pages.

Some idea of the scope of the volume can be gained when it is mentioned that the index, which is printed in small type, occupies no less than 22 pages. Steel products of all kinds are described with tabulated information on every essential point, and illustrations are given to make the descriptions still plainer. It would be difficult to find any product of steel that is not described in this catalogue, but we learn that there are many special articles not enumerated, which are dealt with from time to time in separate pamphlets.

Although the cost of preparing this catalogue must have been enormous, we understand that those genuinely interested can obtain copies if they apply to the United States Steel Products Company, 24A. Kiangse Road, Shanghai.

THE FAR EASTERN REVIEW

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SPECIAL MINING NUMBER

Owing to the war, it has been found impracticable to publish the Special Mining Number of the FAR EASTERN REVIEW on the date originally proposed. An announcement in regard to the date of publication will be made in due course.

THE WAR AND CHINA

It is solely with the economic aspect of the war, especially in relation to the Far East, that this journal is concerned. The political considerations involved are not matters for discussion in the columns of a paper that has consistently upheld the ideal of Equal Opportunity in China. To seek to further the interests of China and all foreign nations possessing trading connections with the Republic has always been the aim of the REVIEW, coupled, of course. with the desire to assist in the extension of the use of foreign manufactures in the Philippines, Japan and throughout the Far East. The place of origin of such manufactures has had for us only the same academic interest that it possesses for the compilers of Customs statistics. It is true that, in cases where there was what we considered to be unfair discrimination against a particular country in the drawing up of specifications we have frankly protested. The object of that protest, however, was not to advance the interests of one country to the detriment cf others, but to secure fair play all round. This having been our attitude since the first issue of the REVIEW saw the light, our readers will appreciate our policy of restraint in regard to the political problems brought into prominence by this unhappy war.

That trade and commerce in the Far East must suffer is inevitable. Operations in the trading and commercial worlds are based almost entirely upon credit. A widespread state of war means the suspension of credit and consequently the practical suspension of commerce. Local trade can still progress in a measure, but is necessarily restricted. The wealth in specie or bullion of the nations engaged in war, instead of being employed for the support of commercial credit, is devoted to the maintenance of the national credit, serious impairment of which would render victories in the field but empty triumphs. It is as if broad streams which normally irrigated fertile stretches of country were dammed back so that the waters spread over rocky, intractable ground—from which no crops could ever accrue—and incidentally overwhelmed other tracts which formerly were productive. The wealth that formerly was employed to create wealth, in time of war is used to destroy the wealth that already exists. The immediate effect is felt by the belligerent nations, but when, as is now the case, nearly all of the great manufacturing countries are engaged, the reaction affects the remotest parts of the globe. The mercantile shipping of the belligerents is port-bound as long as hostile naval forces exist capable of preying upon sea-borne commerce. Neutral shipping, it is true can still operate, but even in their case their rights of operation are gravely restricted by the law of neutrality. As the countries with the greatest aggregate of mercantile shipping tonnage are at war, considerable interruption of oversea commerce is certain. The British Government, however, has officially announced that all waters except the North Sea are "open," and this means that British, French and neutral shipping can, as heretofore, carry on oversea trade. But, until the cessation of hostilities, manufacturing will entirely cease in some countries and be greatly curtailed in others. Moreover, the debtor nations, which depend for their material progress upon financial assistance from Europe, are thrown upon their own resources and consequently new works and extensions will have to be deferred for an indefinite period. These are facts which will have to be taken into calculation when endeavouring to forecast the economic effect of the war upon China.

The latest Customs returns showing the trade of the belligerents with China are of timely interest. The value of

the direct trade with each of the belligerent countries is as follows:—

	Hk. Tls.
Austria-Hungary:—	
Imports from	4,121,913
Exports to	1,550,175
Total	5,672,088
Belgium:—	
Imports from	15,830,838
Exports to	6,546,398
Total	22,377,236
France:—	
Imports from	5,299,517
Exports to	40,749,782
Total	46,049,299
Germany:—	
Imports from	28,302,403
Exports to	17,025,224
Total	45,327,627
Great Britain:—	
Imports from	96,910,944
Exports to	16,346,413
Total	113,257,357
Japan:—	
Imports from	119,346,662
Exports to	65,544,186
Total	184,890,848
Russia:—	
Imports from	22,152,888
Exports to	44,921,437
Total	67,074,325

In addition the imports from Hongkong are of a total value of Tls. 171,636,099 while the exports to the British Crown Colony are of a value of Tls. 117,128,661. There is also a considerable trade with French Indo-China, Singapore, British India, Australia and Canada. It will be found that the total trade of China with Germany and Austria-Hungary amounts to Tls. 50,999,515. Unless arrangements could be made to carry this trade in neutral bottoms, which is improbable, it will entirely cease. As the Allies maintain command of the seas it is probable that the trade will flow into new channels, and the dislocation, as far as China is concerned will be of short duration. As America is in the fortunate position of being aloof from the conflict, she has an exceptionally good opportunity of increasing her trade with China. This amounted in 1913 to Tls. 73,077,499 namely, imports from Tls. 35,427,198, and exports to Tls. 37,650,301. If the opportunity is taken these figures should be greatly increased in the near future.

The situation affords no justification for undue pessimism. Adjustment to altered conditions will probably be embarrassing at first, but China is too huge a potential market to be neglected. Experience has shown that wars are usually followed by a burst of financial and commercial activity. In Japan, for example, after the war in 1904 there was the biggest boom experienced in the history of the country. China will still present almost boundless possibilities for commerce and the investment of capital, and, although the available capital of the world will have been enormously decreased by the war, China is certain still to attract a fair measure of attention. With a Government in China strong enough to keep the country in order investments of capital in the country might become more popular than before as, strange though it seems to write and read it, there is apparently as much security in China under a strong Government as there is in Europe.

It is unlikely, always assuming that the rebellious element within and without China fails to disturb the peace of the country, that dangerous pressure will be exerted by foreign nations. Territorial readjustments in Europe and elsewhere are likely to keep the European Powers fully occupied, and there is no reason to suppose that the existing agreements to respect the territorial integrity of China will not be respected. China, peacefully progressing, will present a market too valuable to be overlooked, and we feel confidence in prognosticating that, when violent cupping has purged the war fever, the trade of China, both import and export, will not only recover lost ground but develop to an extent hitherto apparently beyond the pale of possibility.

GERMAN INTERESTS IN CHINA

While the war now proceeding in various parts of the world will impose an economic stress of tremendous force upon the various nations engaged none is likely to feel it more than Germany. Coincident with the development of her great fighting machine she has built up a commercial spirit which has blossomed and borne rich harvests, and had prosaic commercialism been sufficiently powerful or rapid in its growth to eclipse the splendor of spectacular militarism Germany would undoubtedly have earned for her growing genius for organised trade a large place in the world's economic progress. What we are particularly interested in is her activity in China; an activity which is now likely seriously to be retarded by a conflict produced by the mischievous and unrestrained power of the military. What Germany has done along commercial and industrial lines in China in the immediate past is well known, but what she may have done in the future had not the grim commands of war called a halt, is only indicated by the movement which had just managed to get afoot in the Fatherland before the outbreak of hostilities.

In a recent issue of the "Times" it was pointed out that "for some considerable time past the development of Germany's economic interests in China has been becoming a new catchword of German politics," and the writer went on to show what the catchword had developed into. He says:—The subject was discussed at length in the secrecy of the Budget Committee, and there was hardly a speaker who did not refer to it in the Reichstag debate on the Foreign Office Estimates. The Reporter on the Estimates, Herr Bassermann, said that grave anxiety had been expressed that Germany was being outpaced in China by other European Powers and by Japan. Herr Spahn, who said that China was the greatest foreign market still open to competition, complained of the lack of interest in Germany and of the defects of organization due mainly to the concentration of financial resources in a small number of large banks. Herr Gothein and others told the same tale. The representatives of the Government said they must admit the defects of German financial organization, and the fact that, since industrial loans last autumn were thrown open to competition, valuable industrial concessions had been secured by foreign countries. They also indicated that Government support would be given to efforts which are being made to create a German industrial organization for China independent of the Deutsch-Asiatische Bank.

It is doubtful whether all the makers of speeches are much more clear about what they want in China than when they thunder about the opening up of Turkey and Germany's claim to a "place in the sun" there or in South America, or in any other profitable part of the world. The demand for new "industrial" organization is, however, incessant, although there is considerable obscurity about the scheme actually contemplated. The movement is said to have originated, strangely enough, in certain Austrian successes in China, which were secured while the Financial Concert, from which Austria was excluded, was in full operation. The chief organizers seem to be the banking-house of Schroeder at Hamburg, which is one of the most important German houses not included in the comprehensive syndicate known as the Deutsch-Asiatische Bank. The scheme is doubtless intended to comprise all the most important German industrial concerns, and there is some reason to suppose that it is desired to secure English co-operation. The theory that

Germany and England are now natural partners in Chinese business is being systematically propagated. It is certainly held in high political quarters, as well as in financial and commercial circles, which have always maintained that the Six Powers group was a farce kept up in the political interests of the Powers which could not find money.

Until more definite information is provided regarding the new scheme it will be well to bear in mind some facts of the present position in Germany. The public and Parliamentary complaints and the new industrial proposals are based nominally upon dissatisfaction with the Deutsch-Asiatische Bank. It is no doubt true that a close financial syndicate is not the best source of initiative and is not likely to look eagerly for "new business" and to seize upon any opportunity that arises. At the recent general meeting of the bank it was admitted that proposals were made from time to time for the support of Chinese undertakings, such as coalmining, iron production, construction of private railways, cement and sugar factories, and so on; but the conditions in China, where the investors in such undertakings would have no guarantee, and the conditions imposed upon the German Bourses, make all such proposals unacceptable. Herr Dernburg, who is being much criticized for "frightening German capital away from China," put the matter very plainly in a letter to the *Berliner Tageblatt*. He showed that foreign industrial undertakings are seldom placed on the German market, because the risks to which company promoters are exposed by German law are too great; because new issues in Prussia are entirely under the control of the Government, which is guided mainly by the desire not to force up the rate of interest; and because there is in these circumstances no public in Germany with an appetite for foreign shares. These are very important considerations, which are of some interest to foreign countries.

One might illustrate the revival of German interests in China in various ways. It is not many years since proposals were constantly made to get rid of Kiaochou altogether. Now one finds nothing but articles and lectures insisting upon its importance, and it is worth nothing that the subject is especially popular in naval quarters. The most definite development, however, is the further improvement of the shipping services. The revision of the shipping subsidy agreements and the new working arrangements between the North-German Lloyd and the Hamburg-Amerika Line mark a determined effort to strengthen the German position. Whereas at present there is a single subsidized fortnightly service of the North German Lloyd, the Hamburg-Amerika Line is opening in October its new monthly passenger and postal service with ships of a speed of 15 knots, and the North-German Lloyd is continuing its fortnightly service, without a subsidy, but under a new contract with the Government. The speed of the ships has to be increased from 14 to 14½ knots, and the company undertakes to give priority to German over foreign freights and to carry official passengers and official cargoes at 20 per cent. below the ordinary rates. The main point of the agreement seems to be that, while the North-German Lloyd continues to secure the postal carrying trade, it obtains a greater freedom for the development and organization of its freight business than was possible under the agreement by which a fixed subsidy was paid, and the Government had full control of the service. It is argued that Government control has not proved a really valuable check upon freight rates for German exports, which have in practice to be adapted to international conditions.

Germany attaches special importance to independent services to China because of political considerations, among which direct communication with German warships and with Kiaochou is not forgotton; but, as has appeared in other directions lately, her policy in regard to the Far Eastern services is only part of a general policy of increasing by every possible means direct German trade with every important oversea market and promoting trade upon the lines of absolute independence of foreign ports and foreign ships.

The result of the war will, of course, determine what is to become of the many schemes which have been developed not only by Germany, but by other countries, for operation in China. That they will be set back for a considerable period, no matter who is victorious, goes without saying, and the only Powers capable of adequately developing the large field awaiting exploitation in China are those who have kept their purse strings free from the entanglements of armed conflicts. The largest investors in China were Great Britain, France, Germany and Belgium, and the finances of all of these nations will become so strained by the war and the resultant economic upheaval that it will be many years before there is likely to be a free flow of money available for employment in China. The needs of this country in the immediate future, therefore, will have to depend upon local resources and whatever capital may be available in America for industrial and economic development.

KNITTING MACHINES IN CHINA

Considerable expansion occurred during the past 12 months in the knitting industry at Swatow, not only in increased numbers of home workers, but also in the establishment of a steam driven factory, which was to commence operations in July, 1914, reports Mr. Myrl S. Myers, American Consul-General at Swatow. Heretofore, except for a small factory at Chaoyang, in which 20 hand machines were operated, this industry has been confined to the homes of the operators. It is, therefore, apparent that this factory marks an entirely new development in this industry locally, and should the venture prove profitable, it is reported that further expansion will follow.

The factory is 128 by 53 feet and 32 feet high, built of a kind of concrete, which is used extensively in all native construction work. The machinery will include 40 American automatic machines, 200 and 220 needles each, for knitting socks, 4 American winding machines, and about 20 machines for making towels, nets, and grass matting. A small steam laundry will also be run in connection with the knitting plant. The motive power will be furnished by a 40 horsepower steam engine and ordinary tube boiler. The building cost $9,000 gold, power plant $3,500, machines and accessories $22,500. The factory will have a maximum daily output of 300 dozen pairs of socks, 50 dozen towels, and, in addition, nets and grass matting. About 200 hands will be employed, mostly girls and women, whose wages will average $2.50 monthly with free board.

As has been noted, the home knitting industry expanded during the past year. Thirty-six hand machines for knitting socks and 10 semi-automatic ones were put into operation—increases of over 15 and 28 per cent. respectively. The new hand machines are largely English, while the semi-automatic ones are American. By the addition of these new machines the maximum output may be said to have increased by about 100 dozen pairs of socks per day. Five new machines for knitting coarse cotton sweaters were also started during this period.

CARNEGIE POCKET COMPANION

The Carnegie Steel Co., one of the subsidiary companies of the United States Corporation have just issued a new Pocket Companion which supersedes the old edition as published in 1903.

The Pocket Companion is intended especially for Engineers, Architects and Builders as a Hand-Book containing useful information and tables appertaining to the use of Steel.

These Pocket Companions are gotten up at considerable cost both in the way of direct labor in making the calculations for all the tables contained therein as well as the cost for publishing the book, which is printed on special India paper and contains about twice as much information as is usually found in the ordinary Hand-Book, and occupies about half the usual room.

The nominal charge for this publication is G. $2.00 per copy, but to *bona fide* Architects, Students and Universities who express a desire for same, the United States Steel Products Co., of 24 A Kiangse Road, Shanghai, will be pleased to furnish them gratis.

COAL IN THE PHILIPPINES

A HUGE DEVELOPMENT COMPANY

The *Manila Daily Bulletin* reports that capital to the amount of P. 3,600,000 has been secured for the development of the rich coal district along the Bisbig river in Mindanao, discovered some years ago by Mr. F. L. Cunningham.

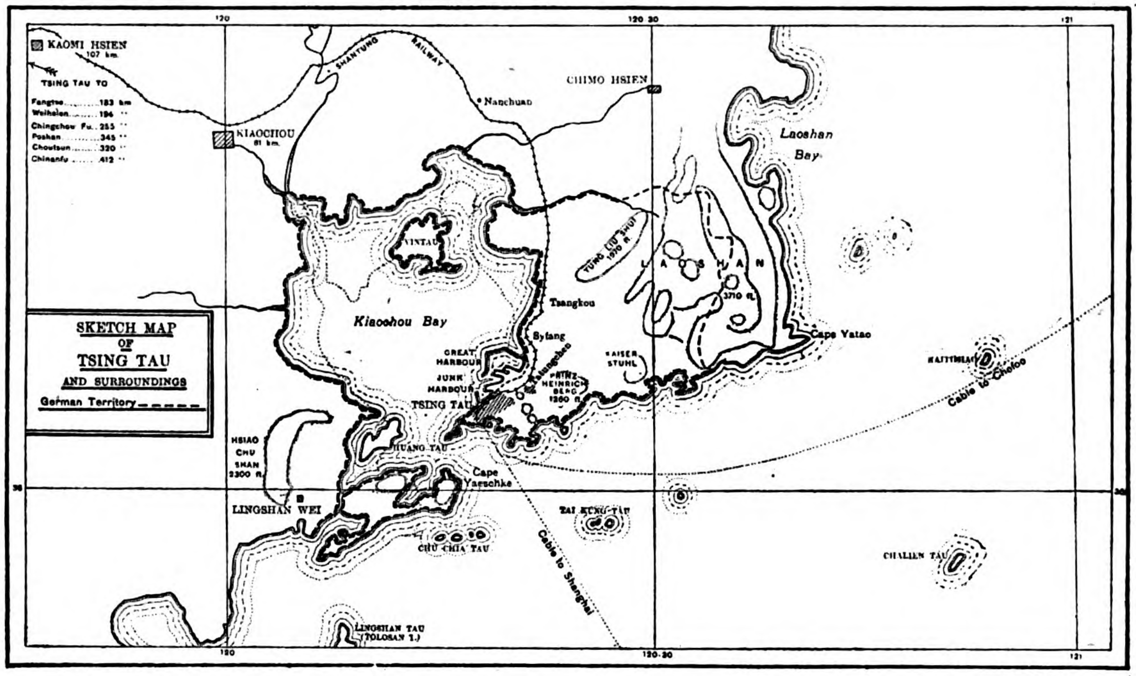
The coal lands to be developed are situated on the east coast of Mindanao about half way between the northern extremities of the island. They are traversed by the Bisbig river which empties into a harbor capable of being converted into a first-class port by the expenditure of comparatively little money.

There are three veins of good coal on the property. One vein has a depth of five and a half feet, and the third, as far as it has been traced, gives indications of exceeding the other two in extent and richness. The coal is of a quality superior to that mined at one time at Bataan, and prospects for the establishment of a coaling station at the mouth of the Bisbig are said to be very bright.

In addition to its mining venture the capitalists interested intend to install a saw-mill and exploit the promising forest resources of the Bisbig district. This end of the enterprise is not fully determined, however, as the necessary concessions have not as yet been obtained from the government.

THE PROTECTORATE OF KIAOCHOU

While the titanic clash of arms in Europe engrosses attention elsewhere residents of the Far East naturally felt particular interest in the fate of the leased territory of Kiaochou. It was realized as soon as the general war became imminent that Kiaochou was likely to be the scene of a naval and military conflict between the forces of the Triple Entente and those of Germany, aided, perhaps, by the small Austrian naval detachment in Far Eastern waters. While the Allies had a naval preponderance, it was recognised that actually to take the city of Tsingtao would involve the co-operation of land forces with which the Allies were none too well equipped. It seemed, therefore, as if there were a probability of operations in which the chances of success were fairly equal.



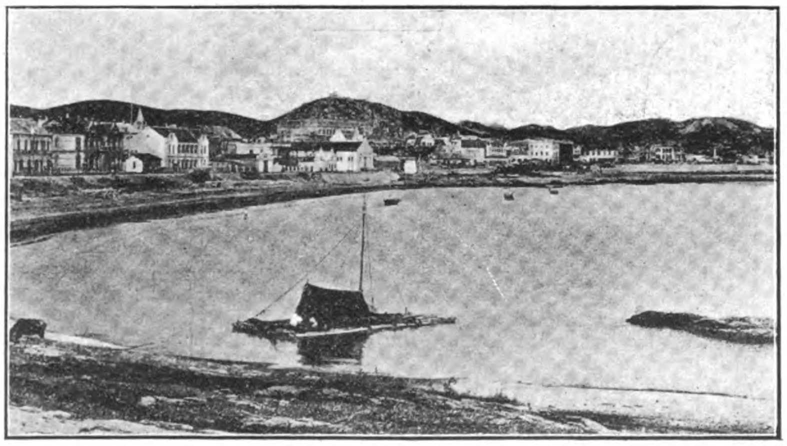
From many points of view it was felt, even by the belligerents, that it would be advantageous if some formula could be found by which Kiaochou could be removed from the area of conflict. Its capture or retention by Germany could not have the slightest effect upon the war itself, and for reasons that are sufficiently obvious it was deemed highly undesirable that European forces should fight on Chinese soil. There is reason to believe that the Allies held their hand in the hope that conversations that were proceeding between the Ministers of the Powers interested would prove successful. It is thought in some quarters quite possible that a satisfactory arrangement might have been made, but on August 15 Japan issued an ultimatum to Germany in the following terms:—

"We consider it highly important and necessary in the present situation to take measures to remove the causes of all disturbances of peace in the Far East and to safeguard the general interest contemplated by the agreement of Alliance between Japan and Great Britain in order to secure a firm and enduring peace in Eastern Asia, the establishment of which is the aim of the said agreement. The Imperial Japanese Government sincerely believe it their duty to give advice to the Imperial German Government to carry out the following two propositions: Firstly, to withdraw immediately from Japanese and Chinese waters German men-of-war and armed vessels of all kinds and to disarm at once those which cannot be so withdrawn, and, secondly, to deliver on a date not later than September 15 to the Imperial Japanese authorities, without condition or compensation, the entire leased territory of Kiaochou with a view to the eventual restoration of the same to China.

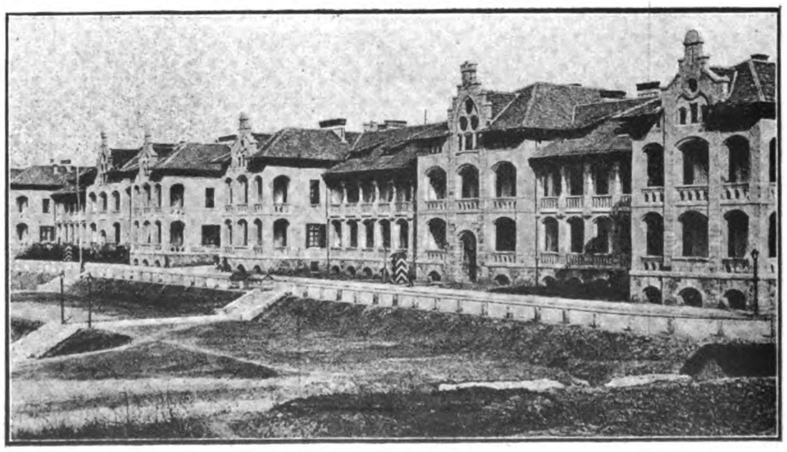
The Imperial Japanese Government announce at the same time that in the event of their not receiving by noon, August 23, 1914 the answer of the Imperial German Government signifying unconditional acceptance of the above advice offered by the Imperial Japanese Government, they will be compelled to take such action as they may deem necessary to meet the situation."

This, of course, entirely altered the aspect of affairs. Being couched in such terms it was hardly to be believed that Germany would accept the terms of the ultimatum, although resistance against the overwhelming forces that Japan would bring to operate held out no prospect of success.

The town of Tsingtao, which is situated at the entrance of Kiaochou Bay in Shantung province, was occupied by a German squadron on November 14, 1897 on account of the murder of two German missionaries. Subsequently on March 6, 1898, an area of about 200 square miles, exclusive of the bay, was transferred to Germany on a 99 years' lease. The district was declared a Protectorate of the German Empire on April 27, 1898. Surrounding the district and bay is a neutral zone, whose outer limit is 30 miles from highwater mark on the coast of the bay. Tsingtao was heavily fortified, docking facilities were provided for war vessels and a permanent garrison was installed.

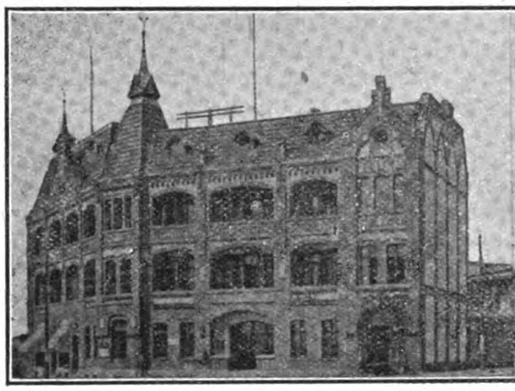


Tsingtao from the Bay.

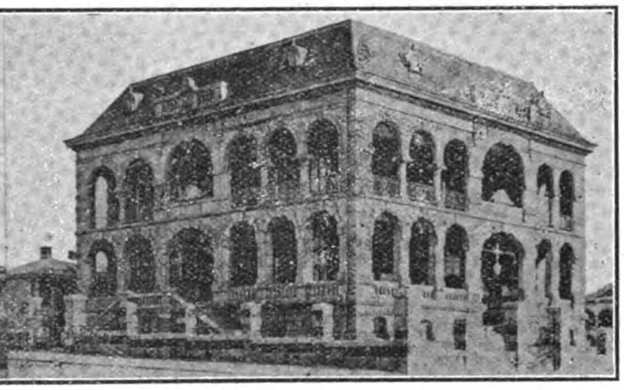


A Street in Tsingtao.

Under German rule Tsingtao and district became one of the show places of the Far East. Magnificent roads were constructed and the public and other buildings which were erected could bear comparison with those of many of the great cities of Europe. On September 2, 1898, Tsingtao was declared a free port and the trade has increased to such an extent that in the last Chinese Customs report it was announced that Tsingtao was only surpassed in volume of trade by four other ports. The railway from Tsingtao to Tsinanfu was opened on June 1, 1904, and coal mines at Fangtse and Hungshan were rapidly opened up.* The right to build this railway and to operate the mines was conferred by the treaty of March 6, 1898.



German Post Office, Tsingtao.



Deutsche-Asiatische Bank, Tsingtao.

The bay of Kiaochou is an extensive inlet about two miles north-west of Cape Jaeschke. The entrance is not more than 1¾ miles across, the east side being a low promontory with rocky shores on which stand the town of Tsingtao. On the west side of the entrance is another promontory with hills rising to about 600 feet. The Chinese city of Kiaochou is about five miles from the sea, beyond the Protectorate frontier.

Artillery Camp, Tsingtao.

There are two anchorages at Tsingtao for big ships, the larger one being behind the east promontory and the other on the south side. Three moles for berthing ships have been constructed and these are connected with the railway.

The Japanese fleet was blockading the port when we went to press

* Articles on the Tsingtao-Tsinanfu Railway and other projected railways in Shantung appeared in the FAR EASTERN REVIEW of October and November, 1913.

GOVERNMENT PAPER MILL AT HANKOW

DESCRIPTION OF THE BUILDING

After what at first seemed interminable delays the government paper mill at the Seven Mile Creek is rapidly nearing completion and it is expected that in a little more than six weeks it will be ready to start work. The first evidence of this is an inquiry, appearing in this issue, by the mill for quotations on white linen rags, says the *Central China Post* of June 7, and continues:—

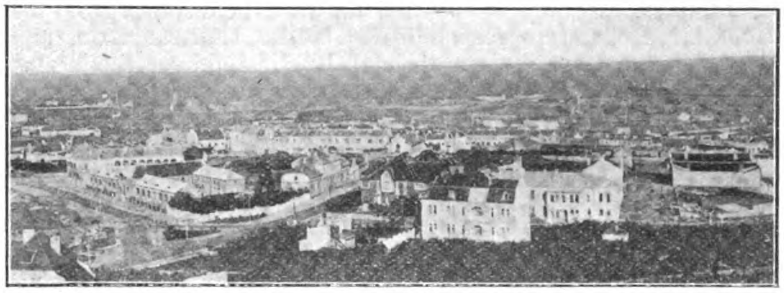
The reconstruction of the water tower has been the chief cause of delay in the last few months. Prior to the outbreak of the revolution in 1911 the tower was under construction and five of the eight struts which support the tank had been erected. The uprising put a stop to the work with the result that the half completed structure collapsed, damaging the struts so as to necessitate them being re-straightened. This work has taken something like four months and now the mill is only awaiting the finishing of the work on the tower.

Some of the most up-to-date improvements in the manufacture of paper are embodied in the mill, which is the most complete in China. It will be capable of manufacturing paper from either straw, rags or wood pulp, and in this connection will be largely experimental. The machines are two in number, one sixty and the other forty-eight inch, manufacturing bond paper for bank notes and paper for general use. The machinery is all American.

Few persons in Hankow have an idea of the vast size of the tract of ground taken up by the mill. This tract is bounded by the railway and the Seven Mile creek and is oblong in shape and although quite a large stretch is left for future extensions, it takes about ten minutes to walk from one end of the developed compound to the other. Along the creek the mill has an extensive bund and jetty while on the railway there is a special station.

The narrow creek crossed by the first of the railway bridges cuts across one end of the mill grounds, and constitutes a dividing line between the Chinese coolie residences and the business quarter. On the other side of the creek are three houses for foreign and Chinese superintendents and a mess for ten foreigners. Immediately alongside these are the office buildings, seen from the river, with the clock tower. Before and behind these buildings are two gold fish lakes on the edges of which willow trees are being planted. The mill proper with its godowns is placed in the centre of the compound while the rest of the ground is taken up by pumping house, filter beds, reservoirs, a straw storage godown and better class Chinese houses.

The mill building is shaped roughly like an E, the projection in the middle running through the back of the building. It is divided in two and constitutes the sorting rooms for rags and straw. The back line of the E. at each side of the projection is similarly divided into beaters' and chemical departments. The machines occupy the parallel lines of building at the top and bottom of the E while those curving from the ends to the centre are the delivery godowns. The power house runs parallel with the back of the block.



General View of Tsingtao.

The majority of the buildings in connection with the mill are three storeyed and present quite an imposing appearance. The architects were Messrs. Atkinson and Dallas. An institute for teaching Chinese students the art of paper making in conjunction with the mill was suggested. However it is understood that this proposal has been shelved.

Other Views of Tsingtao.

THE TRANS-SIBERIAN RAILWAY SERVICES

GROWTH OF THE TRAFFIC

The rapid increase in the traffic over the Trans-Siberian system to the Far East is to be directly attributed to the improvement in the facilities offered, says a correspondent of *The Times*. At the present time it is possible for a passenger to leave London on a Sunday and arrive at Shanghai *via* the Russian railway system in 14 days, against 35 days when making the journey *via* Suez; and when the railway improvements, which have now been sanctioned by the Russian Government, are completed, the time of the journey to Peking will be reduced by two days, and the journey will then take 11 days only. This is being accomplished by the increased mileage of double tracks on the route, by the provision of new bridges, and other permanent-way work. It is estimated that the total cost of the double tracking of the 2,150 miles of the Trans-Siberian route will amount to about £13,000,000. The expenditure ought to be justified by the traffic; it cannot be too strongly emphasized that whereas Russian railway enterprise in Asia was formerly connected with plans for territorial expansion and offensive strategy both in the Middle and the Far East, it is now based upon ordinary commercial considerations of Imperial defence, and the peaceful development of these vast territories.

Through Bookings

It was the policy of arranging through bookings with the English railways which has stimulated the use of the route by the travelling public. The question of arranging tickets to the Far East was first discussed in 1905, but it was not until 1908 that a system was brought into operation under which passengers could take tickets and register luggage through to certain towns in the Far East, the principal places being Vladivostok, Nagasaki, Tsourouga, Shanghai, and Harbin. The Russo-Japanese War interrupted the extension of these facilities, but when the normal working of the railways was resumed, conferences between the administrations of railways and steamship lines concerned were again held, with the result that the State railways of Japan and Korea have been brought into the arrangement, and last year the Chinese railways (Peking and Mukden line) agreed to the issue of tickets and the registration of luggage to Peking and Tientsin.

Passengers from England can travel by various routes. To take only one example, they can begin their journey by using the excellent daily services to Moscow *via* Harwich and the Hook of Holland, leaving Liverpool-street at 8.30 p.m. on Sunday evening, and arriving in Shanghai *via* Siberia on the Saturday week, that is, 14 days. It may be pointed out that the distance from the Hook of Holland to Alexandrowo is the shortest from any Channel port. The journey through Russia and over the Trans-Siberian route can be made either in the Russian trains or by the services of the Sleeping Car Company. The Trans-Siberian trains of the Sleeping Car Company are composed of first and second class cars. The first-class compartments contain two sleeping berths, also table, chair, special reading lamp, and ample hook and rack accommodation for hand baggage. In the second-class cars of the Sleeping Car Company's trains there are a limited number of two-berth compartments, the remainder containing four berths each. There are no two-berth second-class compartments on the Russian State or Chinese Eastern Company's trains. The cars are supplied with electric light, and heated during the winter. The *personnel* of the trains generally speak four languages—Russian, German, English, and French. On the Chinese portion of the journey the attendants speak Chinese and Russian. The latest telegraphic news is posted in the restaurant car.

Six Thousand Miles of Railway.

Until these services were instituted the Trans-Siberian route was but little known. It was in the year 1903 that the through traffic facilities were first provided. In conjunction with the Russian and Chinese Eastern Railways the Sleeping Car Company established a through train on the railway, which begins at Alexandrowo or at Wirballen, and thence over the broad-gauge railway of European Russia to Cheliabinsk, 2,311 versts from St. Petersburg. It is at this point that the two branch lines, one from St. Petersburg and one from Moscow, converge and connect with the Trans-Siberian Railway. From this station to Manchuria, a distance of 4,472 versts, the line runs right across Siberia through thousands of miles of forests and vast stretches of agricultural land, crossing several mountain ranges and important rivers to Manchuria. At Mandchuria, the first station in Manchuria, the Chinese Eastern Railway begins, and as this railway was built on the five-foot gauge, and is operated by the Russian Government, no change is necessary, after once starting on the Russian railways, until Vladivostok is reached, a distance of 1,604 versts. The distance traversed from St. Petersburg to Vladivostok is therefore 8,387 versts, or 5,560 miles. As Alexandiowo is 1,472 kilometres (915 miles) from Ostend, the total distance from Ostend to Vladivostok is 6,475 miles, or from London to Vladivostok 6,611 miles. By the route *via* St. Petersburg, Moscow, Samara, and Irkutsk it is 5,900 miles from St. Petersburg to Vladivostok, but by the northern route *via* Viatka the distance is reduced to the figure above mentioned. The last rail of this great enterprise was laid on November 3, 1901, but the line was not opened for permanent regular traffic until two years later.

New Trains and Facilities

In addition to the through bookings *via* Siberia, a passenger can now take a round trip ticket from London to Shanghai by way of the Trans-Siberian Railways, and return from Shanghai to London available by any passenger steamer *via* the Suez Canal, the tickets being available for two years. This means that a passenger can now take a round trip ticket and register his luggage to Shanghai with no more trouble than he would have in booking and registering luggage to Amsterdam.

Further round-the-world facilities are under consideration, and it is expected that at the conference to be held in September next arrangements will be completed to enable a passenger to go out by the Canadian Pacific Railway, Cunard Steamship Line, or Hamburg-American Line services to the Pacific Coast, thence by steamer to Japan, and home *via* the Trans-Siberian Railways *via* Harbin, Mukden, Irkutsk, Moscow, or St. Petersburg; or the voyage may be taken in the reverse direction. To those whose leave is for a fixed period the saving of three weeks or more on the journey to and from home, is a great consideration; and in the course of a year or two it is most probable that the time taken *via* the Siberian Railways will be reduced. The growth of the traffic to the Far East since the Trans-Siberian through bookings were put into force has been remarkable, and the Russian State Railways have at the present time under consideration a question of new trains on the line between Wirballen-St. Petersburg, Alexandrowo-Moscow.

The administration of the Japanese State Railway and of the Manchurian Railways take a keen interest in the development of the traffic, and print the time-tables in English, and also publish guides in English.

A Board of Trade return states that the number of passengers, exclusive of season ticket holders, carried by British railways in 1913 amounted to 1,228,316,000, of whom 26,025,000 were first class, 12,088,000 second class, 933,498,000 third class, and 256,705,000 workmen. Their fares amounted to nearly £60,000,000. The total expenditure on railway working in 1913 was £78,803,000 and the total net income was £52,011,000.

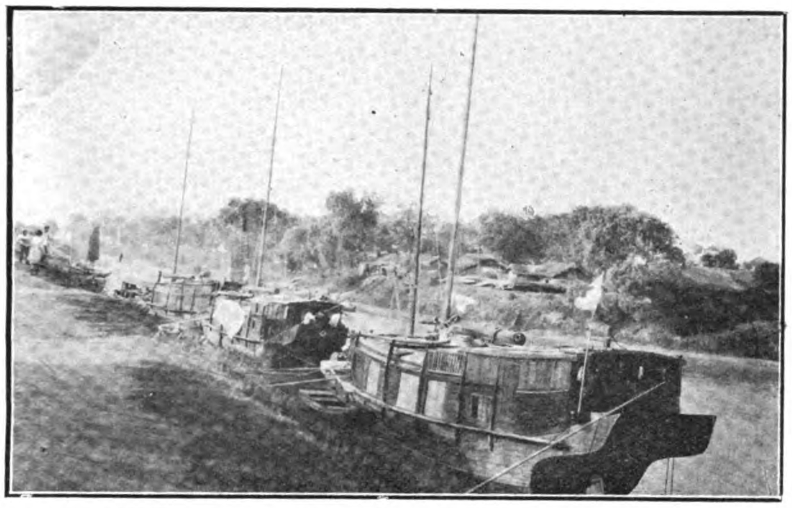
The mileage of railways in Europe increased from 206,987 in 1910 to 212,651 in 1912, in America from 326,357 to 343,643, in Asia from 63,188 to 66,534, in Africa from 22,850 to 26,491, in Australasia from 19,229 to 21,678, and in the world from 638,611 to 670,997. Of the 212,651 miles in Europe at the end of 1912, 98,952 were privately owned, 321,406 out of the 343,643 in America, 22,694 out of the 66,534 in Asia, 10,656 out of the 26,491 in Africa, 2708 out of the 21,678 in Australasia, and 456,416 out of the 670,997 in the world.

THE HWAI RIVER CONSERVANCY COMMISSION

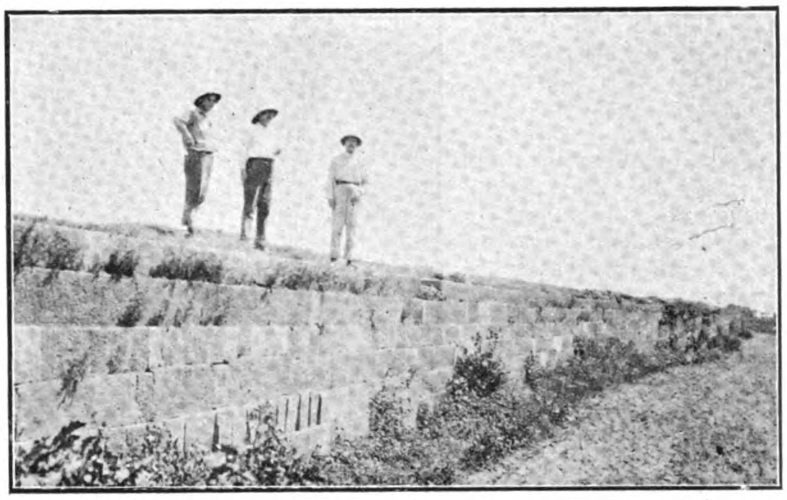
The labours of the American Red Cross Board of Engineers on Chinese Conservancy in connection with the investigation of the Hwai River Project are nearing their conclusion, that is to say as far as the actual field work is concerned. For the benefit of those readers who have not followed the development of American interest in flood prevention and cure in China it may be well briefly to explain what led up to the despatch by the American Red Cross of a Board composed of the most distinguished authorities in America on water conservation and flood prevention.

The constantly recurring floods and attendant famines in China led to periodical appeals on behalf of the sufferers to the American Red Cross; appeals that were always received with generous sympathy. But the practical American mind realized that far better than relief after the disaster would be prevention of the devastating floods. To ascertain how far it was feasible to restrain the unbridled Hwai River, which was the primary cause of the disasters which periodically overtook the unfortunates who lived in its basin, the Red Cross secured the services of Mr. C. D. Jameson, Mem. Am. Soc. C. E., to report on the possibilities. His excellent report (which was published in the FAR EASTERN REVIEW of November 1912) was the means of quickening the interest of the Chinese Government in the question, and at the end of 1913, a National Irrigation and Water Conservation Bureau of China was formed, with Mr. Chang Chien, Minister of Agriculture and Commerce, as its head.

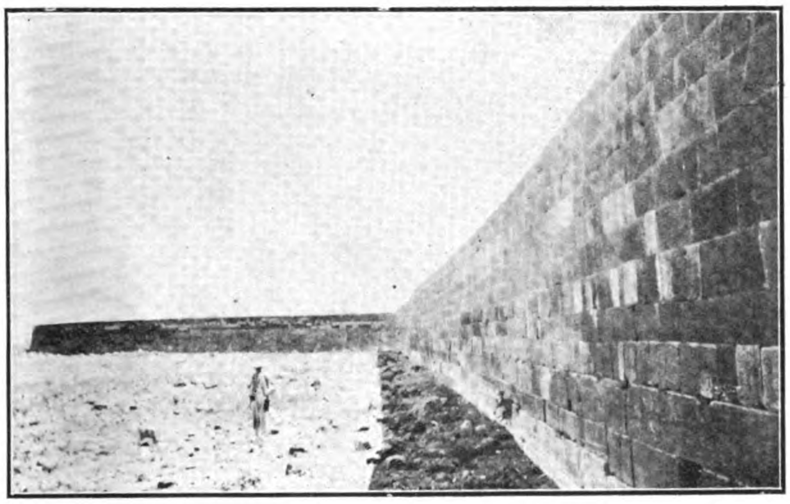
A month later a preliminary agreement was signed by the Chinese Government and the American Minister at Peking in regard to this work which contemplated the eventual flotation, by the aid of the American Red Cross, of a Hwai River Conservancy Loan of $20,000,000, U. S. Currency at 5 per cent. Mr. C. D. Jameson immediately left China for America to report to the Red Cross with a view to having a Board of experts sent to China to report on the entire scheme.



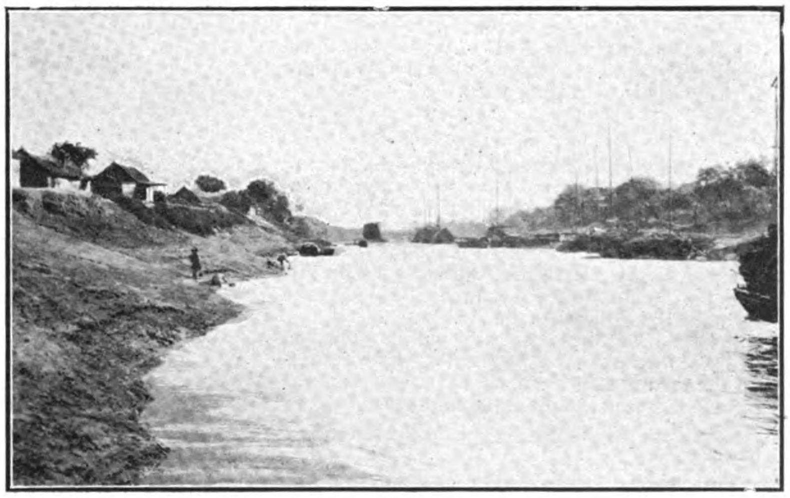
The Grand Canal. House-Boats of the American Red Cross Engineers.



On the Ming Dyke near the point where the Dyke and Canal diverge.



The Famous Ming Dyke. Hungtze Lake.

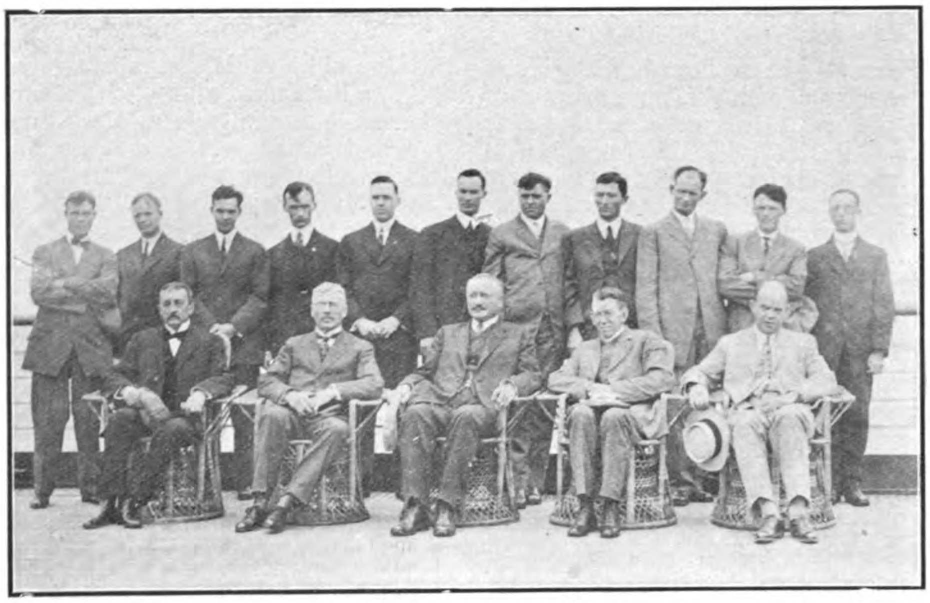


The Grand Canal.

The following Board was selected:—Colonel William L. Sibert, U. S. Army, Department of Engineering, Chairman; Mr, Arthur P. Davis and Professor D. W. Meade. A sketch of Colonel Sibert's career was given in our issue of June last. The reputation established by Colonel Sibert at the Panama Canal, where, it will be remembered, he designed and built the

Gatun Dam, enhanced that which he had gained during his ten years' experience of flood prevention on the Mississippi and Ohio. Mr. Arthur P. Davis, Chief Engineer of the U. S. Reclamation Service, has naturally special qualifications for the work that had to be done, while Professor D. W. Meade of the Wisconsin University is one of the most eminent consulting hydraulic engineers in America. That three such men, with Mr. Jameson as General Adviser, were to undertake the final investigations formed a guarantee that they would be carried out most scientifically and thoroughly. The Board brought with them a staff of specially selected American surveyors.

Before the departure of the party from America Mr. Jameson was able to submit the results of two additional years of instrumental surveys in the flood region by the Kiangsu survey students. It may be mentioned that subsequent investigation have shown that the levels and data collected during this period were accurate. These maps and plans, which were placed at the disposal of the Board, proved of the greatest assistance, and the excellent work, performed reflected the greatest credit upon Mr. Chang Chien, who for ten years had taken great interest in flood prevention and who was responsible for the education and appointment of the Kiangsu students who have made these surveys. The Board of engineers arrived in Shanghai on June 28 and lost no time in beginning their investigations. Two parties were formed. The first party proceeded along the Grand Canal from the Yangtsze to Tsing Kiang-pu. The other started at Haichow and checked back to Tsing Kiang-pu. One man was detached to check the levels down the Hwai River and across the Hungtze Lake.



American National Red Cross Conservancy Engineers to China. Front row, left to right:— Mr. C. D. Jameson, General Adviser; Mr. A. P. Davis, Colonel Sibert, Professor Meade; Mr. Cornish, Principal Assistant.

An investigation was made of all the water courses along the Railway from Pukow to the Grand Canal down the Hwai River to Tsing Kiang-pu and then down the Grand Canal to the Yangtsze. As a result of the investigation made it is probable that better results can be attained than Mr. Jameson indicated in his original report. There are no insurmountable difficulties in carrying out the work. It will not be a philanthropic one pure and simple, but will more than pay for itself as a business proposition.

The Board returned to Shanghai on August 24. The whole party left two days later for Hankow. Then they were to visit Kaifengfu, and make an examination of the Yellow River, as the condition of that river is rather an important factor. The party then goes to Peking, and will return to Shanghai to catch a steamer on September 19 for America. The Report of the Commission will probably be submitted to the Red Cross in October.

FAR EASTERN RAILWAYS

CHINA

Kirin-Changchun Railway.—It has been decided to build a repairing shop at Changchun for the repair of rolling stock.

Nanchang-Kiukiang Railway.—A Japanese paper reports that on June 30 an agreement was concluded between the East Asia Development Co. and the Chinese company which has been building the Nanchang-Kiukiang railway. since 1906, for a loan of Y2,000,000. The line has been constructed between Kiukiang and Tehanhsien, a distance of about 35 miles, and it is hoped that the Y2,000,000 will be sufficient to build the remaining fifty miles. The interest on the loan is said to be 6½ per cent., and the principal is redeemable in twenty years.

Lanchowfu to Kuldja.—A Peking report states that a preliminary contract has been signed by the Chiaotungpu and a Belgian syndicate to construct a line from Lanchowfu to Kuldja. It will be 1,850 miles long and will cost £12,000,000. The construction loan will be secured upon the line itself and mining concessions in Kansu and Sinkiang.

American Railway Material.—Consul-General F. D. Cheshire, stationed at Canton, reports that the following purchases of railway material have been made from American manufacturers, values being in United States currency.

Canton-Kowloon Railway, locomotive electric headlights and car couplers, $3,000; Canton-Hankow Railway, 5 locomotives of consolidated type, $100,000: 60 covered freight cars, $100,000; 40 open freight cars, $50,000; 60,000 American redwood sleepers and large quantity of bridge and crossties, $60,000; locomotive turntables, and steel bridges, $26,000.

In addition sundry articles of American manufacture, such as electrical lamps, fans, railway, supplies, lubricating oils, etc., have been purchased in greater quantities, during the past year than ever before.

Shanghai-Nanking Railway.—The following figures of traffic returns (approximately) for the week ended July 25, are issued by the Shanghai-Nanking Railway:—

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	40,321	13,903	54,224
1913....	41,066	8,494	49,560
Increase.	—	5,409	4,664
Decrease	745	—	—

For four weeks.

Year.	Passengers.	Goods & Sundries	Total
	$	$	$
1914....	149,374	44,728	194,102
1913....	168,920	39,272	208,192
Increase.	—	5,456	—
Decrease	19,546	—	14,090

Week ended August 1.

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	39,587	13,746	53,333
1913....	28,087	5,014	33,101
Increase.	11,500	8,732	20,232
Decrease	—	—	—

For five weeks.

Year.	Passengers.	Goods & Sundries.	Total.
	$	$	$
1914	188,961	58,474	247,435
1913	197,007	44,286	241,293
Increase.	—	14,188	6,142
Decrease	8,046	—	—

Week ended August 8.

Year.	Passengers.	Goods & Sundries	Total for the week.
	$	$	$
1914	43,608	11,722	55,330
1913	28,884	5,598	29,480
Increase.	19,724	6,124	26,848
Decrease	—	—	—

For six weeks.

Year.	Passengers.	Goods & Sundries	Total
	$	$	$
1914....	232,569	70,196	302,765
1913....	220,891	49,884	270,776
Increase.	11,678	20,312	31,990
Decrease	—	—	—

Week ended August 15.

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	47,518	10,614	58,132
1913....	22,124	4,819	26,961
Increase.	25,394	5,795	31,171
Decrease	—	—	—

For seven weeks.

Year.	Passengers.	Goods & Sundries	Total for the week.
	$	$	$
1914....	280,087	81,810	360,897
1913....	243,633	54,703	297,736
Increase.	37,054	26,107	63,161
Decrease	—	—	—

Week ended August 22.

Year.	Passengers.	Goods & Sundries	Total for the week
	$	$	$
1914....	46,930	10,360	57,290
1913....	*24,762	*4,642	*29,404
Increase.	22,168	5,718	27,886
Decrease	—	—	—

For eight weeks.

Year.	Passengers.	Goods & Sundries.	Total.
	$	$	$
1914....	327,017	91,170	418,187
1913....	267,795	59,345	327,140
Increase	59,222	31,825	91,047
Decrease	—	—	—

*No traffic beyond Tanyang in 1913.

MALAYA

Singapore to Bangkok.—Says the *Malay Mail*:—The date on which it will be possible to go by rail from Singapore to Bangkok has been for long, and is likely to remain for some time yet, a fruitful source of speculation. Necessarily it can be little more.

We are gradually, however, approaching a point at which a date can be fixed with something very near certainty. From all the indications it would appear that, so far as the southern part of the Peninsula is concerned the western line will be the first to be pushed through to Siam, and a step in this direction was made when on July 4 the last spike was driven on the line linking up Bukit Mertajam and Alor Star. This, of course, does not mean that the line is by any means open to traffic. It is hoped, however, on the first of October to commence traffic up to Pinang Tungal (Muda River) on the boundary between Province Wellesley and Kedah. After that sections will be opened up as they are finished off, until ultimately the whole of the line up to Alor Star is in use, this being most probably accomplished at the end of 1915 or early in 1916.

The length of line from Bukit Mertajam to Alor Star is 56 miles, and it is proposed to link up from Alor Star to the Perlis-Siamese boundary, to meet a line to be built from Ootapao, the nearest point on the completed portions of the Siamese system, which forms, roughly, a triangle between Trang, Tung Sawng and Singgora. The survey is now being made from Alor Star to the Perlis-Siamese boundary, the portion of the line which will be built by the F. M. S., while the Siamese authorities are doing similar work on the other side of the boundary, the intention being, apparently, to push on this connecting link as soon as possible. It is anticipated that through traffic will be established between Alor Star and Ootapao during 1917, probably towards the end of that year.

The length of the proposed new line between Alor Star and the Siamese boundary is from 40 to 45 miles. The country between Alor Star and Aro is similar to that around Alor Star, consisting mostly of padi fields. From Aro to the boundary it consists of *kebuns* and padi fields, so that the whole of the projected new line is through comparatively easy country. It will cross the boundary at Padang Besar. Between Aro and the boundary the line will run through some particularly beautiful country, consisting of limestone hills like those at Batu Caves. In this district also are the phosphate mines, an industry that will doubtless be considerably helped by the coming of the railway.

To the East, about ten miles from Aro, is Bukit Arang, where the Perlis Government intends to bore for oil, work for which it is now calling for tenders.

The date at which through connection between Bangkok and Singapore is secured will, of course, depend entirely upon the speed with which the Siamese authorities push on their work of filling up the gaps in their main line between Bangkok and Tung Sawng. As to how this work is progressing very little is known in the F. M. S., but an authoritative opinion expressed to us the other day was to the effect that progress was steady, and that the through route might be open some time in 1918.

As to the intentions of the F. M. S. Government with regard to the eastern line, at present open for traffic up to Kuala Tembeling, and under construction up to somewhere in the neighbourhood of Kuala Lipis, no information is available officially, but unofficial news would seem to indicate that the work is being pushed forward.

TRAMWAYS

Shanghai Tramways.—The following is the traffic return of the Shanghai Tramways (Foreign Settlement) for the month of July, 1914, and for seven months ended July 31, 1914, with figures for the corresponding periods last year:—

	July, 1914.	July, 1913.
	$	$
Gross receipts	113,758.87	111,342.15
Loss by currency depreciation	27,998.41	24,666.24
Effective receipts	85,760.46	86,675.91
Percentage of loss by currency depreciation	26.25	23.24
Car miles run	313,684	262,808
Passengers carried	5,058,861	4,552,571

	seven months ended July 31, 1914.	seven months ended July 31, 1913.
	$	$
Gross receipts	750,001.81	651,139.76
Loss by currency depreciation	175,279.96	141,048.89
Effective receipts	574,721.85	510,090.87
Percentage of loss by currency depreciation	24.76	22.94
Car miles run	1,915,801	1,619,119
Passengers carried	31,482,225	25,897,237

Week ended July 29.

	1914.	1913.
	$	$
Gross receipts	24,692.79	31,162.71
Loss by currency depreciation	6,046.28	6,975.65
Effective receipts	18,646.51	24,187.06
Percentage of loss by currency depreciation	26.21	23.29
Car miles run	70,670	63,810
Passengers carried	1,103,838	1,248,331

Week ended August 5.

	1914.	1913.
	$	$
Gross receipts	24,332.22	26,125.90
Loss by currency depreciation	6,029.43	5,917.75
Effective receipts	18,302.79	20,208.15
Percentag of loss by currency depreciation	26.34	23.66
Passengers carried	1,082,823	1,062,236
Car miles run	69,331	59,885

Week ended August 12.

	1914.	1913.
	$	$
Gross receipts	26,040.24	24,352.42
Loss by currency depreciation	6,396.67	5,582.17
Effective receipts	19,643.57	18,790 25
Percentage of loss by currency depreciation	26.10	23.96
Passengers carried	1,163,749	985,504
Car miles run	71,076	59,200

Week ended August 19.

	1914.	1913.
	$	$
Gross receipts	26,664.22	24,176.64
Loss by currency depreciation	6,546.28	5,515.98
Effective Receipts	20,118.34	18,660.66
Percentage of loss by currency depreciation	26.10	23.93
Passengers carried	1,155,293	984,227
Car miles run	74,475	59,354

Week ended August 26.

	1914.	1913.
	$	$
Gross receipts	25,609.10	23,379.63
Loss by currency depreciation	6,346.82	5,425.29
Effective receipts	19,262.28	17,954.43
Percentage of loss by currency depreciation	26.38	24.39
Passengers carried	1,151.200	963,978
Car miles run	70,349	59,321

MINING

Kailan Mining Administration. — The total output of the Administration's mines for the week ended July 18, amounted to 57,128.84 tons and the Sales during the same period to 36,948.32 tons.

Week ended July 25, output 58,641.86 tons, sales 57,603.33 tons.

Week ended August, 1, output 56,368.96 tons, sales 29,777.79 tons.

Week ended August 8, output 54,292.42 tons, sales 46,269,19 tons.

Week ended August 15, output 45,758.71 tons, sales 55,163.10 tons.

HARBORS, ETC.

The Whangpoo Conservancy.—The dredging away of Pootung Point in the Whangpoo River has been begun. It is at present being carried out by contract, but the contract expires shortly and the work will later be carried out by the Conservancy's own plant.

Wonsan Harbor Construction.—The reconstruction of the habour at Wonsan in Chosen, it is understood, will begin next spring, to be completed in five years at a cost of 1,500,000 yen. The question has been outstanding for many years, and extensive investigations have lately been made to settle it, with the result above stated.

FINANCIAL

Foreign Capital for Japan.—It is reported that the Kyushu Electric Light Company is negotiating with a certain group of London financiers through Messrs. Sale and Frazar of Tokyo for a loan of 3,000,000 yen. It is believed in local business circles that the negotiations will resolve themselves into an issue of debentures in London at very good terms in the near future, as they were started on the personal inspection of the company's plant and business condition by Mr. Sale when he was on a flying visit here. The vernacular press regards the event as significant as heralding the inflow of foreign capital into provincial industrial circles whereas so far the indroduction of foreign capital has been limited to the financing of enterprises in Tokyo or Osaka.

The Third Bank, Japan.—At the ordinary general meeting of shareholders the following profit and loss accouut was passed:—

	Yen
Net profit for the term	284,865.87
Brought over from last account	27,485.31
Total	312,351.18
To be distributed:—	
Dividend at 12 per cent. per annum	261,000.00
Fees for officers	25,000.00
Carried forward to next account	26,351.18

Bank of Chosen.—At the ordinary general meeting of shareholders the following profit and loss account was passed:—

	Yen.
Net profit for the term	399,328.34
Brought over from last account	37,330.11
Total	436,658.45
To be distributed as follows:	
Loss reserve	50,000.00
Dividend equalization fund	8,000.00
Fees for officers and social expenses	29,900.00
Dividend at 6 per cent. per annum	225,000.00
Secondary dividend at 1 per cent. per annum	37,500.00
Carried forward to next account	88,258.45

As will be seen in the account just stated the dividend has been increased to 7 per cent. per annum instead of 6 per cent. as heretofore while at the same time dividend is proposed to be distributed on the Government shares for the first time.

Hongkong and Shanghai Bank.— The following is the report of the Court of Directors:—

The Directors have now to submit to you a general statement of the affairs of the Bank and balance sheet for the half-year ending June 30, 1914.

The net profits for that period, including $2,067,311.85, balance brought forward from last account, after paying all charges, deducting interest paid and due, and making provision for bad and doubtful accounts and contingencies, amount to $5,590,084.02.

The Directors recommend the transfer of $350,000 from the Profit and Loss account to credit of the Silver Reserve Fund, which fund will then stand at $18,000,000.

They also recommend writing off Bank Premises Account the sum of $400,000.

After making these Transfers and deducting Remuneration to Directors there remains for appropriation $4,825,804.02, out of which the Directors recommend the payment of a Dividend of Two Pounds and Three Shillings Sterling per Share, subject to Income Tax, *viz*, £258,000, which at 1/10⅝, the rate of the day, will absorb $2,730,795.58.

The Balance $2,089,008.44 to be carried to New Profit and Loss Account.

A Branch Office of the Bank has been opened at Tsingtau.

The Directors very much regret to have to record the death of their colleague Mr. G. Friesland last March. Mr. E. Goetz having resigned his seat on leaving the Colony, Mr. Ad. Widmann and Mr. F. Lieb were invited to fill these two vacancies. Both these gentlemen as well as Mr. H. A. Siebs and Mr. C. Landgraf have since resigned. Mr. G. T. M. Edkins has been invited to join the Board.

Hypothec Bank of Japan.—The accounts for the last half year are as follow:—

	Yen.
Net profit for the term	1,413,373.90
Brought over from the last account	108,150.96
Total	1,521,542.87
To be distributed:	
Reserve funds	373,000.00
Dividend at 10 per cent. per annum	955,000.00
Fees for officers	85,000.00
Carried forward to the next account	108,524.87

At the end of June last the Bank held reserve funds to the extent of 4,303,400 yen against the whole paid-up capital to the extent of 20,000,000 yen. While the accommodation the Bank had given to the general public amounted, up to the end of June, to 194,979,423 yen the mortgage debentures issued to that date reached a total of 164,969,580 yen.

COMPANIES

"Star" Ferry Co., Ltd., (Hongkong).—The report for the year ending April 30, 1914, was as follows:—

The net earnings of the boats, after paying all working expenses, amounted to $89,066.32 as against $78,780.46 the previous year.

The amount at credit of profit and loss account (after paying for repairs, allowing for directors' and auditor's fees and placing $4,615.05 to credit of accident fund), including $6,705.18 brought forward, is $94,775.91, which, with the approval of shareholders, it is proposed to appropriate as follows:—

To write off Ice House Street Pier	$ 6,418.12
To write off boats	2,301.00
To pay a dividend of $1.70 per share from working profits	68,000.00
To pay a bonus of 30 cents per share from interest account	12,000.00
To carry forward	6,056.79
	$94,775.91

Keihin (Japan) Electric Tramway Co.—The accounts for the term ended March 31 were adopted as follows:—

	Yen.
Net profit for the term	158,307.94
Brought over from last account	14,284.00
Total	172,591.98
To be distributed:—	
Legal reserve	8,000.00
Secondary reserve	8,000.00
Bonuses for auditors and directors	8,000.00
Dividend at 6 per cent. per annum	122,400.00
Carried forward to next account	26,191.98

Yokohama Electric Car Co.—At the ordinary general meeting of shareholders of this company the following profit and loss account, was passed:—

	Yen.
Net gains for the term	172,399.72
Brought over from last term	2,353.49
Total	174,753.21
To be distributed:—	
Legal reserve	8,650.00
Secondary reserve	8,650.00
Dividend at 8 per cent. per annum	40,000.00
Dividend on first new shares at 8 per cent. per annum	80,000.00
Dividend on second new shares at 8 per cent. per annum	30,000.00
Fees for officers	5,000.00
Carried forward to next account	2,453.21

Kawasaki Dockyard Co.—At the ordinary general meeting of shareholders of this company the following profit and loss account was passed:—

	Yen.
Net profit for the term	629,800
Brought over from last account	41,000
Total	670,800
To be distributed:—	
Reserves	123,000
Sinking fund	120,000
Dividend at 8 per cent.	331,600
Fees for officers	30,000
Carried forward to next account	67,179

Yokohama Warehousing Co.—At the ordinary general meeting of shareholders of this company the following profit and loss account was passed:—

	Yen.
Net gains for the term	34,768.65
Brought over from last account	31,997.20
Total	66,765.85
To be distributed:—	
Legal reserve	1,000.00
Fees for officers	2,000.00
Dividend at 6 per cent. per annum.	53,200.00
Carried forward to next account	9,765.85

Tokyo Gas and E. I. Co.—At the ordinary general meeting of shareholders of this company the following profit and loss account was passed:—

	Yen.
Net profit for the term	20,714.11
Brought over from last account	2,985.34
Total	23,699.45
To be distributed:—	
Legal reserve	1,100.00
Secondary reserve	2,150.00
Divident at 8 per cent.	16,000.00
Fees for officers	800.00
Pension reserve	500.00
Carried forward to next account	3,149.46

Osaka Shosen Kaisha.—This company has presented the following profit and loss account:—

	Yen.
Net profit for the term	9,750,000
Less expenditure	7,010,000
	2,740,000
Brought over from last account	888,000
Total	3,628,000
To be distributed as follows:—	
Sundry reserves	1,762,000
Divident at 10 per cent. per annum.	825,000
Reserve for the equalization of dividends	500,007
Carried forward to next account	541,000

Fuji Minobu Railway Co.—At the fifth ordinary general meeting of the shareholders of this company the meeting passed the following profit and loss account:—

	Yen.
Net profit for the term	20,580.37
Brought over from last account ..	688.56
Total	21,268.93
To be distributed as follows:—	
Legal reserve	1,030.00
Dividend at 5 per cent. per annum..	16,703.30
Carried forward to next account ..	3,555.50

Nisshin (Japan) Cotton Spinning Co.—At the ordinary general meeting of shareholders of the Nisshin Cotton Spinning Co. the following profit and loss account was passed.

	Yen.
Net profit for the term	62,226.38
Brought over from last account ..	91,412.33
Total	153,638.71
To be distributed as follows:—	
Legal reserve	3,201.00
Secondary reserve	6,500.00
Bonuses for the officers and employees	5,000.00
Dividend at 5 per cent. per annum.	88,000.00
Carried forward to next account ..	50,938.00

Yokohama Fire Insurance Co.—At the ordinary general meeting of the Yokohama Fire Insurance Company the following profit and loss account was passed:—

	Yen.
Net profit and balance brought over from last account	358,865.20
To be distributed:—	
Legal reserve	20,000.00
Dividend at 10 per cent. per annum	162,500.00
Bonuses for auditors and directors.	12,000.00
Carried forward to next account ..	164,365.20

Fuji Gassed Spinning Co.—At the ordinary general meeting of shareholders of this company the business report together with the following profit and loss account was accepted by the meeting.

	Yen.
Net profit for the term	1,040,474.48
Brought over from last account.	958,556.62
Total	1,999,031.10
To be distributed:—	
Legal reserve	52,023.00
Loss reserve	52,023.00
Bonuses and pensions for operatives	52,023.00
Bonuses and pensions for employees	52,023.00
Bonuses for officers..	52,023.00
Dividend at 12 per cent. per annum	765,184.00
Carried forward to next account..	973,732.10

Dai Nippon Sugar Co.—At the ordinary general meeting of shareholders of this company the following profit and loss account was passed:

	Yen
Net profit for the term	1,140,138.98
Brought over from last account ...	530,185.50
Total...	1,670,324.48
To be distributed as follows:	
Legal reserve	60,000.00
Secondary reserve	250,000.00
Sinking fund for the capital aid in the Dairi factory	250,000.00
Pension reserve	15,000.00
Bonuses for officers and employees	85,000.00
Dividend at 8 per cent. per annum	444,000.00
Carried forward to next account...	566,324.48

Tokyo Electric Light Co.—At the ordinary general meeting of shareholders of this company, the profit and loss account was adopted as follows:

Brought over from last account ...	368,980.77
Net profit for the term	1,839,232.41
Total	2,208,213.18
To be distributed:	
Reserves	92,000.00
Dividend at 10 per cent per annum	1,980,000.00
Carried forward to next account...	136,213.18

Tokyo Rice and Products Exchange.—At the ordinary general meeting of the Exchange the following profit and loss account was passed:—

	Yen.
Net profit for the term	124,765.28
Brought over from last account ...	1,278.40
Total	126,043.68
This amount is to be distributed in the following manner:—	
Loss reserve	6,350.00
Bonuses for auditors and directors	6,300,00
Dividend at 10 per cent. per annum	112,500.00
Carried forward to next account...	893.68
Total	126,043.68

China-Japanese Flour Mill Co.—At the ordinary general meeting of this company the accounts for the term ended March 31, and the following profit and loss account were passed:—

	Yen.
Net profit for the term	64,275.77
Brought over from last account ...	34,907.45
Total...	99,183.22
To be distributed in the following manner:—	
Legal reserve	3,000.00
Loss reserve	10,000.00
Bonuses	5,000.00
Dividend at 10 per cent. per annum	60,400.00
Carried forward to next account...	20,283.22

Fuji Paper Mill Co.—The following is the profit and loss account of this company:—

	Yen.
Net profit for the term	446,000
Brought over from last account ...	120,000
Total...	566,000
Sinking funds	60,000
Balance	506,000
To be distributed in the following manner:—	
Reserves	38,600
Bonuses and social expenses... ...	27,000
Pension reserve...	7,700
Dividend at 9 per cent. per annum	309,500
Carried forward to next account...	123,200

Tokyo Stock Exchange.—The accounts for the term ended March 31 were adopted at a recent general meeting as follow:—

	Yen
Net gains for the term	479,294.25
Brought over from last account	7,252.39
Total	486,546.64
To be distributed:	
Loss reserve	24,000.00
Secondary reserve	10,000.00
Sinking fund for office building expenditures	4,000.00
Dividend at 11½ per cent. per annum	448,000.00
Carried forward to next account	546.64

Kinugawa Electric Co.—At the ordinary general meeting of shareholders of this company the following profit and loss account was passed:—

	Yen
Net profit for the term...	405,051
Brought over from last account...	29,366
Total	434,417
To be distributed as follow:	
Legal reserve	21,000
Loss supplementary reserve	21,000
Bonuses for officials and employees	20,000
Dividend at 7 per cent. per annum	356,400
Carried forward to next account	16,014

Teikoku Hemp Weaving Co.—At the ordinary general meeting of shareholders the following profit and loss account was passed:—

	Yen.
Net gains for the term	372,724.53
Brought over from last account ...	24,839.04
Total	397,563.57
To be distributed:—	
Legal reserve	20,000.00
Secondary reserve	40,000.00
Dividend on old shares at 12 per cent. per annum	192,000.00
Dividend on new shares at 12 per cent. per annum	104,000.00
Bonuses	20,000.00
Carried forward to next account...	21,563.57

Dai Nippon Brewery.—This Company's profit and loss account for the last six months was as follows:—

	Yen.
Net profit for the term	630,534.69
Brought over from last account ...	471,555 57
Total	1,102,090.26
To be distributed:—	
Legal reserve	35,000.00
Fees for officers...	31,626.73
Dividend at 12 per cent. per annum	451,200.00
Secondary dividend	75,200.00
Bonuses for employees	25,000.00
Carried forward to next account ...	484,163.33

Kanegafuchi Spinning Co.—This Company's profit and loss account was as follows:—

	Yen.
Net gains for the half year	1,823,249.74
Brought over from last account ...	1,842,259.21
Total	3,665,508.95
Dividend at 12 per cent. per annum	897,997.80
Special dividend at 4 per cent. per annum	299,332.60
Reserves	150,000.00
Pension reserve...	100,000.00
Fund for the promotion of operatives' happiness	100,000.00
Bonus for officers	80,000.00
Carried forward to next account ...	2,038,178.55

Tokyo Fire Insurance Co.—At the ordinary general meeting of shareholders the following profit and loss account was passed:—

	Yen.
Net gains for the half year and balance brought over from last account	468,993.01
Legal reserve	25,000.00
Emergency reserve	144,164.32
Fees for officers and social expenses	15,000.00
Pension reserve...	10,000.00
Dividend at 8 per cent. per annum	200,000.00
Carried forward to next account...	74,828.68

Tokyo Sugar Manufacturing Co.—At the ordinary general meeting of shareholders the following profit and loss account was passed:—

	Yen.
Net Profit for the term	381,919.64
Brought over from last account	64,453.76
Total	446,373.40
To be distributed:—	
Legal reserve............................	20,000.00
Fund for depreciation in fixtures and plant..	20,000.00
Fees for officers and social expenses	27,000.00
Dividend at 10 per cent. per annum	350,000.00
Carried forward to next account ...	19,373.40

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THE FAR EASTERN REVIEW
COMMERCE :-: ENGINEERING :-: FINANCE

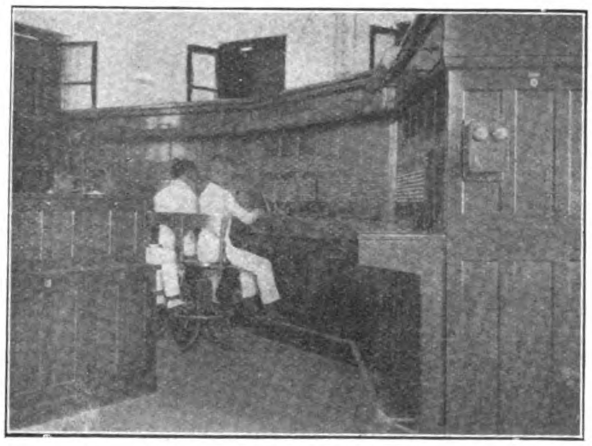
VOL. XI. SHANGHAI AND MANILA, SEPTEMBER, 1914 No. 4

NEW TELEPHONE SYSTEM AT CHANGSHA

That the telephone industry in China is developing rapidly is indicated by several new and modern telephone installations that have been completed recently in various cities. The Chinese have realized the advantages and conveniences of the telephone for Government as well as commercial uses and also are beginning to recognize that telephone systems, properly designed and managed, are paying propositions.

At Changsha a new and modern system has been completed. It is the Western Electric Company's No. 1 central battery type with lamp signals. It has a present equipment for 1,000 local lines and 40 toll or long-distance lines, and is arranged for an ultimate capacity of 3,000 lines, equipment for which may be added in the future as desired.

New Telephone Building at Changsha.

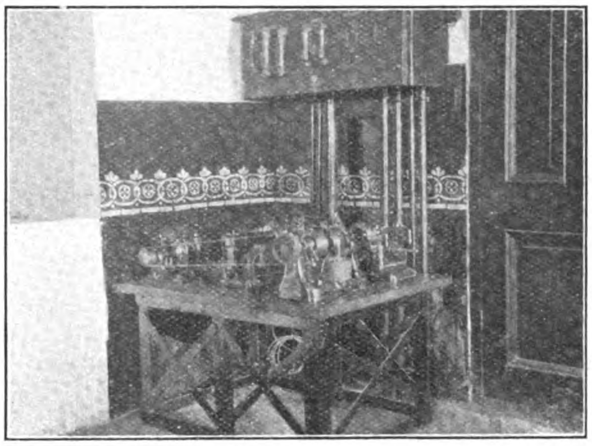


New Central Battery Telephone Switchboard at Changsha.

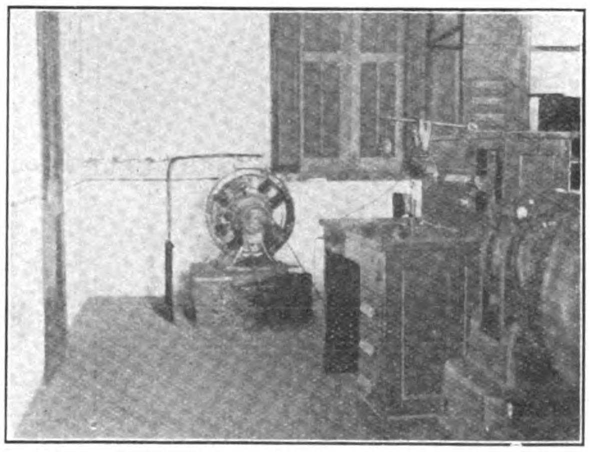
The new system replaces the old system which was the magneto type equipped for 350 lines. The accompanying illustration shows the switchboards of the old system.

To accommodate the central office equipment of the new system a modern brick building was constructed. The accompanying illustration shows this building in course of construction. It was designed especially to meet the needs of the equipment to be furnished.

The switchboard consists of three 6-panel sections, each section having a capacity for 480 answering jacks with lamps and 3,000 multiple jacks. Each section is arranged for three operator's positions and each operator's position is equipped with fifteen pair of cords and plugs for making



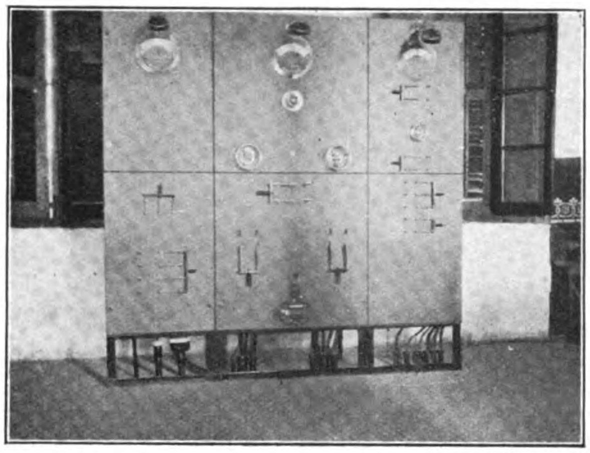
Ringing Machines and Battery Panel.



Charging Machines and Wire Chief's Desk.

the connections between the subscribers. One position of the switchboard is equipped with toll-switching trunks for making connections between toll lines and local lines. The multiple jacks are so arranged throughout the three sections of switchboard that each operator can reach any one of the 3,000 multiple jacks, into which the operator must insert the calling plug for calling the desired subscriber. The switchboard is so arranged that additional sections may be added easily in the future to take care of an increase in the number of subscribers.

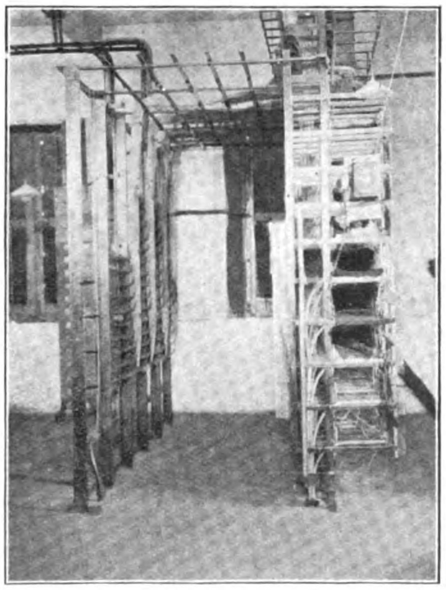
In addition to the main switchboard there is also a single position desk type toll switchboard with an equipment for 40 toll



Power Board.

lines. It is the intention of the telephone company to install toll or long-distance lines extending from Changsha into the surrounding country and one such line has already been erected, viz., from Changsha to Siangtan, a distance of about thirty miles.

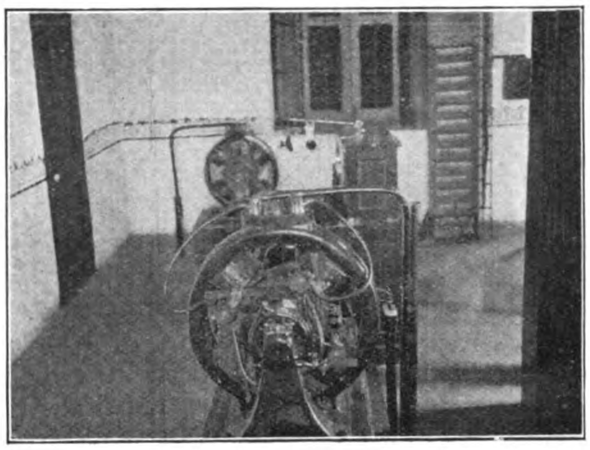
The power apparatus and terminal racks and frames are located in a room directly beneath the switchboard so as to provide an economical and efficient arrangement of connections between the switchboard and various parts of the equipment. All wiring between the switchboard and the frames is contained in cable



Relay Rack and Distributing Frame.

which is placed on steel racks, these racks are designed to accommodate the ultimate capacity of cabling which may be required for the 3,000 lines. The accompanying photograph shows the relay rack and distributing frame. On the latter are mounted the terminals for connecting the outside lines, and also on the opposite side of this frame are mounted the protectors which prevent damage to the switchboard and apparatus from lightning or abnormal electric currents. The upper portion of the distributing frame is used for cross-connecting purposes in order to permit the changing of telephones from one part of the city to another without making a change in the subscriber's telephone number.

On the relay rack are mounted the line and cut-off relays which control the lamp signals of the subscriber's lines in the switchboard. To the left of the relay rack is located the fuse board on which are mounted the fuses for protecting against heavy currents, the various circuits of the switchboard. The fuse board, relay rack and distributing frame are arranged for future growth in accordance with additions to the switchboard.



Charging Machines—another view.

Electric current for operating the switchboard and subscriber's telephones is obtained from one central source, viz., a battery of storage cells located in a small room adjacent to the terminal room. This battery consists of eleven Chloride type cells and has a capacity at present of fifty amperes and may be increased to one hundred amperes in the future by the addition of battery plates. In addition to this main battery there is a smaller battery of eleven cells for increasing the voltage of the talking current on subscriber's lines when connected to long-distance lines, thus providing increased transmission efficiency.

Current for charging the storage batteries is obtained from either one of two charging outfits, this avoids the possibility of

Old Magneto Telephone Switchboard at Changsha.

interruption of service due to a temporary breakdown in the charging outfits. The principal charging outfit consists of a motor-generator set direct connected on one base, the motor to operate from the city lighting and power electric current supply. The other charging outfit consists of a generator belted to a gasoline engine, and is intended mainly for use only in case there is an interruption in the supply of current from the city mains.

Current for ringing the subscriber's telephone bells is obtained from either one of two sources, one a ringing dynamotor operated from the storage battery and the other a ringing generator operated by a motor connected to the city electric light mains.

The various switches, instruments, etc., for controlling the battery, charging and ringing currents are mounted on slate panel power board, supported on a steel angle work frame. The storage battery fuses are mounted on a slate panel located above the ringing machines just outside the battery room. The accompanying illustrations show the charging machines, ringing machines, power board, etc.

A Chief Operator's desk is provided in the switchboard room for the proper supervision of the work of the operators.

In the frame and terminal room is located the Wire Chief's desk, which is equipped with the usual circuits for testing the switchboard and outside lines for faults that may occur.

The lines from the central office to the subscribers' telephones are carried in cable to various distribution points at which are located cable terminals. The cable for this purpose is steel armored, lead covered, paper insulated telephone cable and is installed in sizes of 300-pair, 200-pair, 100-pair, 50-pair and 25-pair, and is laid directly in the ground. At the cable terminals are located protectors to prevent damage to the cable. From the cable terminals wires are run on poles to the subscribers' telephones.

The subscribers' telephones are furnished in wall and desk types, and are of the metal case type with black enameled finish which is very durable and also ornamental. Following the usual design for China these telephones are equipped with a microtelephone which combines both the receiver and transmitter in a hand set. These telephones are equally suitable for local and long-distance service.

The new system is under the control and operation of the Hunan Provincial Government and was supplied by the Western Electric Company through their agents Arnhold, Karberg & Co.

The Western Electric Company sent out from their home offices two engineers to install the system and it was put into service during July.

THE RAILWAYS OF MALAYA

PROGRESS DURING LAST YEAR.

Reference is made in the Press from time to time to the spread of civilisation in the Malay Peninsula, and to the remarkable growth of material prosperity in that country since the British authorities extend their influence over its destinies. But to realise how much of this development is due primarily to the policy of road and railroad making one has to visit the country and compare it with other Eastern or Far Eastern lands where progressive works, from one cause or another, have been less marked, says the "Financier." As is the case with most great railway systems, the Malayan railways had a very modest beginning. The initial venture was a short line, eight miles in length, from Taiping to Port Weld, in Perak. Designed with the object of providing communication between the coast and the interior of the State, mainly in the interests of the tin industry, the line was opened for traffic on June 1, 1885. The mileage has been gradually extended, until to-day there are nearly 900 miles of railway in the peninsula, and work is now in progress which in a few years will link up the Malayan lines with the Siamese and Burmese systems, and bring about a transformation in the methods of travel and transport which cannot be without beneficial results to the whole of Southern and Eastern Asia. One other noteworthy fact that should be borne in mind is this: So far as the Federated Malay States system is concerned, the construction of the railway has been effected out of revenue, while financial help was given to the State of Johore and to the Siamese Government to enable them to build railways to join up with the F. M. S. system. This policy was dictated, doubtless, by a desire to render more effective the development of the British portion of the peninsula that is likely to accrue to a continuous line from north to south, with branches to all the principal metalliferous and agricultural districts, and carrying the produce of the interior to the various ports.

PURCHASE OF SINGAPORE RAILWAY.

In 1912 the whole of the railways in British Malaya, including the Singapore Government Railway and the Johore State Railway, were brought under the control and management of the Federated Malay States Railway Department, with its central offices in Kuala Lumpur. The general manager (Mr. P. A. Anthony, M.I.C.E.) reports that the outstanding feature of 1913 was the purchase of the Singapore Railway from the Colonial Government at a total cost of £482,533. This has enabled the Department to proceed with a scheme for doubling part of the line on the island, and to provide a station more in keeping with the importance of Singapore as the Southern terminus and sufficient siding and goods accommodation to enable the railway to keep pace with the rapidly-increasing traffic. Borings in the Straits of Johore on the site of the proposed bridge were taken during the year, and preliminary plans of the bridge are now being prepared by the consulting engineers. This bridge, connecting the island of Singapore with the mainland of the Malay Peninsula, will be one of the longest, if not actually the longest, in any of the Colonies. Mr. Anthony considers it important that this work should not be delayed, otherwise the railway traffic will overtake the limits of capacity of the wagon ferries, which, however, do their work admirably. During the year the purchase of the Prai dock and wharves (Province Wellesley) from the Colonial Government was also under consideration, and has since been completed. A comprehensive scheme for new wharves has been prepared. With the opening of the line to Bangkok by way of Alor Star, in Kedah, a large development of business between Penang and Siam must result, and large expenditure will be necessary at Prai during the next three or four years to enable the railway staff to handle this traffic.

INCREASED EARNINGS

In 1913 the gross earnings from all sources, including motor services, amounted to £1,113,976, as compared with £982,451 in 1912, an increase of £131,525, or 13 per cent. The dividend earned on a net profit of £317,677 works out at 3.93 per cent., as compared with a net profit of £355,854 and 4.35 per cent. in 1912, but it has to be explained that, in order to bring about an adjustment in accounts, due partially to changes of administration, the expenditure in the accounts under notice covers 12½ months, against revenue for 12 months only. It is interesting to note that the total net profit earned by the Federated Malay States Railways since the first section was opened in Perak in 1885 down to the end of 1913 amounts to £3,565,592.

The total mileage of lines open to traffic, including leased lines, on December 31 was 771 miles, an increase of 36 miles during the year, and, as there were over 102 miles of sidings, the total mileage of railroad in operation at the close of the year was 873 miles, against 826 in 1912. During the year the capital account of lines still under construction and surveys was increased by £527,745, while the total expenditure on account of special services on capital account amounted to £794,679. This latter amount, however, includes the cost of purchase of the Singapore Railway, referred to above. The total mileage of railway telegraph wires is 2,099 miles, an increase of 199 miles. Twenty-five new telegraph offices were opened, bringing the total number to 150 at the end of the year.

INTERESTING COMPARISONS.

For the year the train mileage totalled 3,351,405 miles, as compared with 3,194,200 in 1912; the total number of passengers carried was 13,143,659, against 11,589,273 in 1912; the goods carried amounted to 1,172,794 tons, against 988,416 tons, and 136,457 head of live stock, against 128,604. Appended is a table showing the distribution of passengers:—

	1912.	1913.
First class	243,055	286,555
Second class	1,091,346	1,607,207
Third class	10,254,872	11,249,897

These figures do not include season-ticket holders, passengers excessed on trains, workmen and scholars travelling on reduced-fare tickets or free-pass holders.

There was a decided increase of traffic handled at the ports of Telok Anson and Port Swettenham, and the general manager reports that during 1913, 140 ocean-going steamers called at Port Swettenham with import cargo, against 115 in 1912, and 53 called for export cargo, against 51 in 1912. These statistics do not include the British India steamers, which run regularly between Indian ports and Singapore, calling at Port Swettenham.

An interesting comparison is given in the following statistical table:—

	1912.	1913.
Miles open to traffic	734	771
Stations	161	174
Engines	128	153
Bogie passenger coaches	274	298
Four-wheeled coaches	66	65
Goods vehicles	3,067	3,289
Train mileage	3,194,200	3,351,045
Passengers	11,589,273	13,143,659
Merchandise (tons)	988,416	1,172,794
Live stock (head)	128,604	136,457

NEW WORK IN HAND.

For the current year the Federal estimates provide for an expenditure of £2,839,809 on railways, against £2,168,966 in 1913 the amount for special services on capital and revenue accounts and for construction being estimated at over £1,000,000 sterling. This latter amount is about half-a-million less than was projected last year, but includes the cost of a good deal of extension work on the East Coast Railway through Pahang and Kelantan and the construction of a new line from Bukit Mertajam, in Province Wellesley, to Alor Star, the capital of the State of Kedah, and lines opening up fresh territory in the Federated States. These facts have an interest to the manufacturers in Great Britain, for, although a certain amount of work on rolling-stock and other gear is carried out in the State workshops by native workmen under European supervision, orders have to be placed in England for much of the material used on these Malayan railways. The interest in the expansion of trade in British Malaya, therefore, is not merely local, and many will watch with personal interest the changes that are being effected by railway expansion in this remote portion of south-eastern Asia.

TRADE IN NANKING, CHINKIANG AND WUHU

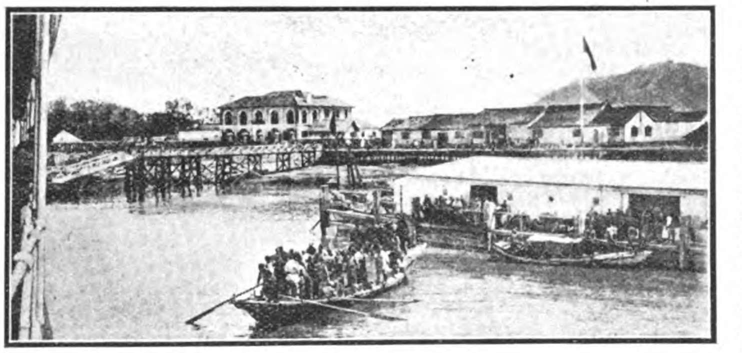
The treaty ports of Nanking, Chinkiang and Wuhu were responsible for a combined trade of $45,800,200* during 1913. The import of foreign goods accounts for $17,374,147 of this total. Direct shipments from Hongkong consisted chiefly of British or Indian manufactured goods and those from the United States of kerosene and other oils. Imports of American manufactured goods were valued at about $1,150,000 and consisted chiefly of shirtings, sheetings, drills, kerosene, sewing machines, household stores and timber (soft wood). An increasing demand among the native population for foreign-style clothing, hats, caps, shoes, etc., is everywhere felt, and although figures for the imports of this class of goods into this district are not available, a conservative estimate would place the amount at $100,000. So far as is known the American manufacturer has no share in this trade. Foreign style hair-dressing shops are furnished chiefly with products of Japanese manufacture.

The commodities supplied by Japan are very numerous owing largely to their cheapness, and include cotton cloth, drills, handkerchiefs, towels, cotton yarn, clothing, coal, bed and table covers, glassware and glass, hosiery, lamps and lampware, looking glasses, paper perfumery, soap, sugar, toilet requisites, toys, umbrellas and matches. The aggressive commercial policy of the Japanese has given them a strong foothold, but if the American manufacturer wishes to compete, a careful study of conditions should enable him to meet success in many lines.

NANKING.

Favorable Trade Conditions—New Railroad.—The value of the net trade of Nanking in 1913 was $10,451,666, an increase of $1,247,573 over that of the preceding year, in spite of the fact that the rebellion kept business at a standstill for about 10 weeks. Foreign goods showed increased imports of $896,355 and shipments of export cargo increased by $917,737, while a decrease of $568,520 was seen in imports of native goods. The total trade in 1913 was made up as follows: Foreign imports, $4,828,165; native imports, $1,265,840; exports, $4,357,661.

The increase in the foreign import trade was no doubt due largely to the Tientsin-Pukow Railway, the opening of which has provided a new trade route of goods going to Anhui and Shantung Provinces, previously supplied by way of the Grand Canal and Chinkiang. Figures for the import and export shipments to and from this port over the Shanghai-Nanking Railway in 1913 are not available, but a conservative estimate values the trade at not less than $1,125,000.



The Station at Nanking.

Average crops were realized during the year, and the new trade route opened by the Tientsin-Pukow Railway was responsible for the large increase in the export of native produce. Wheat cultivation has become prominent since 1912, and it is likely that the future shipments of this cereal will rapidly increase. The manufacture of the famous Nanking silk brocades and silk-gold tapestry has steadily declined since the fall of the Manchus, because much of the goods was used in the old-style official dress.

The rolling stock of the Tientsin-Pukow Railway at the end of 1913 consisted of 32 locomotives, 66 passenger and inspection cars, and 490 freight cars. The freight and passenger receipts amounted to $900,600. Five large corrugated-iron godowns at Pukow have been completed, and the main station and the jetties are nearly finished. The pontoons for the use of passengers and cargo are moored and in working order.

Electric Light—Coinage at Nanking Mint.—The electric-light plant was constructed in 1909 for the local government at a cost of $156,000. There are now installed about 7 miles of wire and 8,000 lights, including 200 street lights. The average monthly receipts are about $3,300, and the plant so far has only paid expenses.

During the first nine months of the year coins to the value of $3,991,000 were minted. From October 1 the mint coined daily 100,000 dragon dollars and 1,200,000 copper 10-cash pieces, making a monthly profit of about $9,000 during that period. The mint purchased its silver from native sycee merchants at Shanghai, the metal being shipped in 50-tael shoes. The reason given for purchasing the silver in this expensive way is that the native workmen can not handle the ordinary heavy bricks of bullion when melted in the crucibles without breaking so many of the latter as to incur heavy loss. The copper is purchased from Japan at an average cost of $13 per hundredweight. The zinc alloy comes from Yunnan Province.

Afforestation—Model Farm.—Through the efforts of Joseph Bailie, of the University of Nanking, considerable progress has been made in the planting of trees in the vicinity. Early in the year a wood lot was planted with bead tree (*Melia azedarach*), Chinese maple (*Acer polymorphum*), and walnut. The estate now has 200,000 trees. The walnuts, both in the field and in the nursery, proved successful and several thousand young trees are now growing. During March over 100,000 trees obtained from Japan were planted, and a like quantity were distributed to outside applicants. Owing to delay in shipping the *Cryptomeria japonica* many were lost, but over 80 per cent. of the 50,000 Japanese red pine (*Pinus densiflora*) are still thriving. The seeds of the yellow pine that the United States Department of Agriculture shipped to the estate produced about 1,000,000 seedlings, but three-fourths were lost during the rebellion.

A model farm of 280 acres, 10 miles up the river from Nanking, is run by a stock company formed by well-to-do Chinese merchants in the United States. The company is capitalized at $400,000 of which $50,000 is paid up. One hundred and fifty acres are under wheat cultivation. In addition 800 fruit trees obtained from California nurseries have been planted, and it is hoped that oranges, lemons, apples, peaches and grapes will be successfully grown. The farm has in use 12 American plows, 20 native plows and one corn planter.

Direct Imports by Countries of Origin.—The value of the direct import trade with foreign countries was $1,983,802 in 1913, distributed as follows:—Japan, $1,412,717; United Kingdom, $256,505; Hongkong $220,313; United States, $59,924; Germany, $11,858; Singapore, $11,665; British India, $3,911; Dutch East Indies, $3,474; Belgium, $1,435. More than half the total consisted of copper purchased from Japan for minting purposes. The trade in cotton goods, although showing a decline in some lines, was on the whole satisfactory, and a good demand in the more important grades is looked for in 1914. Imports of woollen goods showed a large falling off, only 728 yards of cloth, 40 pieces of long ells, and 250 yards of Spanish stripes being imported. Imports of railway plant and materials for the southern section of the Tientsin-Pukow Railway have so far amounted to $3,146,543, the greater part of the material coming from the United Kingdom.

Principal Import Fluctuations—Decrease in Oil Shipments.—In comparison with the figures of the preceding year, imports of American gray shirtings showed an advance and British goods a decline. The latter, however, continue to be in greater demand than the former, chiefly in the 7-9 and 9-11 pound grades. There was a large increase in imports of English sheetings of the 11-pound and over quality, but a falling off in imports from the United States. In plain white shirtings, three-fourths of the trade was in the English article, the remainder of the imports consisting of 48,699 pieces from the Netherlands. Imports of American drills decreased, but there is still a strong demand for the 12¾-pound and over article. English jeans also showed a decrease; all this cloth imported was in 40-yard lengths. Imports of turkey-red cottons and plain italians were steady, but there was a decrease in colored italians. The demand for cotton yarn was brisk throughout the year; imports from Japan have now secured a good share of the trade.

Imports of Chinese cotton goods were fairly satisfactory.

The unusual amount of copper imported was used almost entirely for minting purposes. Shipments of iron and lead arrived also in increased quantities. The cigarette trade has shown great progress recently, and 1913 was a record year. Shipments of coal showed a decline, as did imports of machinery and matches. There was a fair trade in aniline dyes, but imports of needles decreased. The kerosene trade and the trade in foreign soaps were satisfactory and a fair business was done in household stores. Purchases of brown and refined sugar were very large, and imports of timber doubled during the year.

The large stocks of American oil imported in 1912 caused a decline in imports of both tinned and bulk varieties during 1913.

Variations in Exports—American Trade Shipping and Revenue.—Exports of beans in 1913 were double those of 1912 and wheat shipments showed a remarkable rise. Exports of brassware and paper fans were satisfactory, feather shipments increased, as did those of hemp fiber and silk refuse. Melon seeds showed a large gain and sesamum seed shipments nearly doubled. Decreases were noted in exports of hides, raw silk, cocoons, and silk piece goods. The trade in untanned goatskins continued to dwindle, the export during the year being scarcely 5 per cent. of the 1904-5 figures for this article.

Exports to the United States invoiced at the American consulate at Nanking amounted to $520 (of which $500 was the value of a private library) in 1913, as compared with $341 (curios) in 1912. No shipments were made to Hawaii, the Philippine Islands, or Porto Rico.

The number of foreign vessels entered and cleared at Nanking during 1913 was: 2,884, with an aggregate tonnage of 5,064,916, as compared with 2,773 vessels of 4,845,287 tons in 1912. Of the 1913 shipping 1,696 vessels of 3,146,966 tons were British; 904 vessels of 1,648,018 tons were Japanese; 218 vessels of 245,336 tons were German; and 44 vessels of 6,686 tons were

* Values wherever mentioned are in U. S. currency.

American. The American vessels that entered the three ports of the district were nearly all oil steamers or oil barges under tow.

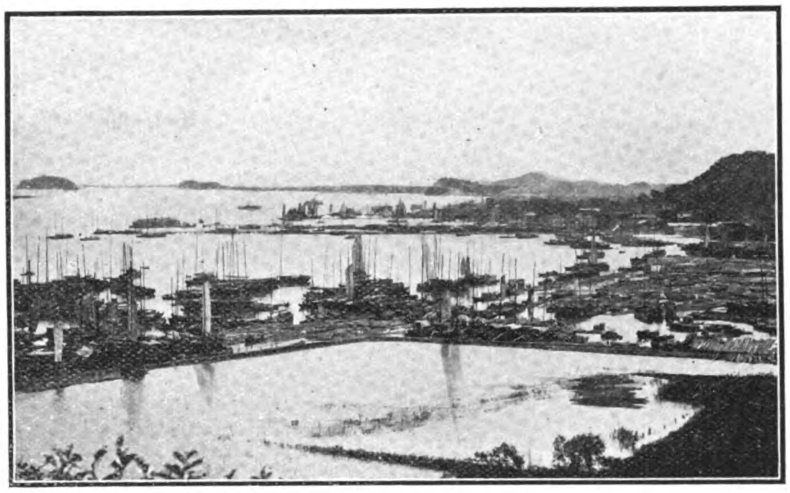
The customs collection at Nanking during the year was as follows: Import duties, $58,835; export duties, $86,962; coast trade duties, $15,884; transit dues, $4,008; and tonnage dues, $4,840. The total collection ($170,529) showed an increase of $42,746 over the figures of the preceding year.

CHINKIANG.

The value of the net trade of Chinkiang was $18,410,960, an increase of $2,243,582 over that of the preceding year. Foreign imports amounted to $6,967,760, native imports to $4,662,878, and exports to $6,780,322. The increase was chiefly in exports, where it amounted to $2,629,908. Imports of native produce showed a gain of $751,813, while those of foreign goods showed a falling off of $1,138,139. The outbreak of the rebellion in July seriously restricted the trade of the port during 8 or 10 weeks. The decline in the import trade is to a large extent due to the condition of the Grand Canal. The large region north of Chinkiang is almost entirely dependent upon the Grand Canal as a trade feeder, but this once important waterway has been so neglected in recent years that navigation is difficult if not impossible during the dry season. The excellent railway facilities at Pukow and Kiaochow have also assisted in diverting trade that formerly came down the canal.

Export shipments of bean cake, wheat flour, and sesamum seed showed very large gains, the trade in the latter having more than trebled. Out of a total value of native produce of $1,590,727 exported by railway to Shanghai, more than $1,500,000 worth consisted of sesamum seed. The imports by railway during the year totaled $507,161. The import trade of the port during the year must be considered satisfactory and, in spite of the condition of the Grand Canal, the volume of import business should experience no further decline within the next few years.

Direct Imports, by Countries—Principal Imports and Exports.—The value of the articles imported direct from foreign countries totaled $2,864,574 during 1913, distributed as follows: Hongkong, $948,940; Japan, $837,511; United States, $569,678; Indo-China, $174,572; United Kingdom, $156,173; Dutch East Indies, $144,519; Singapore, $18,971; British India, $9,365; Germany, $5,249 and Netherlands, $496.



View of Chinkiang.

Increases in Imports of Cotton Goods.—In comparison with the figures of the preceding year imports of shirtings, gray and plain, showed a good increase, the English manufacturer having now a monopoly of the trade; imports of American, Dutch and Japanese shirtings were very small during the year. The local demand for this article is in the 7-9, 9-11, and more than 11 pound weights. American sheetings experienced a slight advance, the trade being chiefly in the 9-11 pound grade. Imports of English sheetings indicated a steady trade, shipments of this cloth being confined almost entirely to the 11-pound and over article. Three-fourths of the plain white shirtings, sales of which increased 20 per cent. in 1913, are furnished by English manufacturers. The remainder of the trade is shared about equally by American and Dutch makes. There were decreases in imports of American and English drills, the former controlling the trade. The sale of Japanese drills has considerably increased and competition with this brand may prove keen in the near future; the demand is almost entirely in the 12¾-pound grade. English jeans predominated in imports of that cloth, which were confined to the 40-yard lengths. Shipments of T-cloths showed a slight advance, the demand being entirely for the English and Indian varieties, and imports being in the 32-inch by 24-yard size. There were good increases in chintzes and furniture coverings, printed crapes, and plain cotton prints. There was an advance of nearly 20 per cent. in purchases of plain cotton italians, and increases were noted in imports of plain and figured cotton lastings, figured cotton italians, dyed cambrics, turkey red cambrics, and shirtings, and cotton flannel. The demand for velveteens was steady, the imports being of the 22-inch size. Towels and handkerchiefs came from England and Japan, the trade in both being of small value. A slight increase was noted in imports of Japanese and Indian cotton yarn, but the English variety is slowly disappearing from the market.

Chinese cotton goods continued to show gains, especially Shanghai manufactured sheetings and nankeens. Native cotton yarn imports appeared to show a revival during the year, and with the exercise of greater care in production should be in active demand.

Other Imports—Increases and Declines in Exports.—Imports of foreign metals, sapanwood, bags, and coal showed increases, but purchases of Japanese matches continued to decline. Shipments of kerosene from the United States fell off considerably, but those from Borneo and Sumatra increased. Imports of black pepper, sandalwood, and soda showed gains, and a large trade was carried on in sugar, especially in brown and refined grades. The aggressive and practical methods of the foreign sugar manufacturers in Hongkong have given them a monopoly of the sugar trade in China, with little fear of competition. The activities of the Hongkong refiners are concentrated on the effort to supplant the native brown and white sugars with the brown and refined products of their manufacture.

A large increase over 1912 was seen in exports of bean cake, a slight advance in wheat exports, and a decline in exports of beans and peas, and egg albumen and yolk. Shipments of wheat flour, the product of local mills, almost doubled, and the export trade in groundnuts was good. Exports of medicines increased, but decreases were felt in dried lily flowers, hams, cow and buffalo hides, groundnut and sesamum seed oils, and melon seeds. Shipments of sesamum seed reached a record figure, having more than trebled during the year. The export trade in raw silk was steady, but there was a considerable falling off in shipments of silk piece goods.

Shipping and Revenue.—The number of foreign vessels that entered and cleared at the port of Chinkiang in 1913 was 3,082, with a total tonnage of 5,406,884, as compared with 2,972 vessels of 5,170,238 tons in 1912. Of the 1913 shipping, 1,804 vessels of 3,281,392 tons were British, 954 vessels of 1,801,716 tons were Japanese, 208 vessels of 261,150 tons were French and 86 vessels of 16,912 tons were American.

The customs collection during the year was as follows:—Import duties $143,270; export duties $137,183; coast-trade duties $54,851; opium duties $275; tonnage dues $8,961 and transit dues $111,859. The total collection showed a decrease of $254,729 over that of the preceding year, due almost entirely to the falling off in the imports of opium, on which the duty collected in 1912 amounted to more than $262,500.

Local Industries.—Two oil companies, one of which is American, maintain large installations on the water front. The American company uses oil barges towed by launches and small tank junks to distribute oil to many points reached by river or canal. There are two silk filatures in Chinkiang which have in operation 200 and 248 reeling wheels, respectively. Each filature has installed two boilers of British manufacture which consume each five tons of coal per day. In each filature the output is one picul (133⅓ pounds) per day, or where new cocoons are reeled 190 pounds. The amount of cocoons required to produce 133⅓ pounds of silk is as follows:—first quality spring cocoons 600 to 613 pounds; summer cocoons 800 pounds, autumn cocoons 933 pounds. There are 940 employees in the two filatures, most of whom are women.

There are five flour mills in this district, with a total output in 1913 of about 500,000 sacks of 50 pounds each. The four larger mills have a daily production of about 1,200 sacks. In the mills at Wusih and Taichow only American machinery is used; at Tungchow the mill is fitted throughout with British machinery, while at Kaoyu both American and British machinery is installed.

The one bean mill in Chinkiang operates 100 native oil presses and four native crushers. It uses daily about 40 tons of beans and has a daily output of 2,000 pieces of bean cake, each weighing about 63 pounds. The quantity of oil produced depends upon the quality of the beans; but generally speaking 133⅓ pounds of beans will yield 16 to 19 pounds of oil, while the inferior grades yield 14 to 16 pounds. The mill employs about 100 workmen.

WUHU.

The value of the net trade of Wuhu in 1913 was $16,937,574, a decrease of $5,192,141 over that of the preceding year. Foreign imports amounted to $5,578,222, a decline of $1,545,979; native imports to $3,965,102 an increase of $1,690,019, and exports to $7,394,250, a decrease of $5,336,182. Although the commencement of the year showed a brisk trade, a reaction soon set in, owing to unsettled financial conditions in Shanghai, and local trade was at a standstill for nearly two months during the rebellion. The financial situation was unfavorable throughout the year and there were several bank failures.

The decrease in trade may be attributed to the general decline caused by the rebellion in July and to the prevailing low price of rice, the provincial trade staple. The estimated annual production of rice in the Province in a good year amounts to about 600,000 tons, 60 per cent. of which is usually available for export; and it is upon this commodity that the trade of the port largely depends. The low price of rice caused the accumulation of large stocks, a general slackness in trade and money stringency. In 1912 eighty steamers were engaged in the carrying trade in rice, but only thirty vessels left with full cargoes in 1913. In spite of the drought during the summer an eighty per cent. rice crop was realized, the yield proving an average one.

The value of foreign goods shipped to the interior under transit pass was $2,418,218. The trade in cotton goods in most cases showed an advance, the greatest increases being in white shirtings and English jeans. Only 778 pieces of woollen cloth were imported, consisting of English camlets, lastings and long ells, and 4,838 yards of broad, medium habit, and

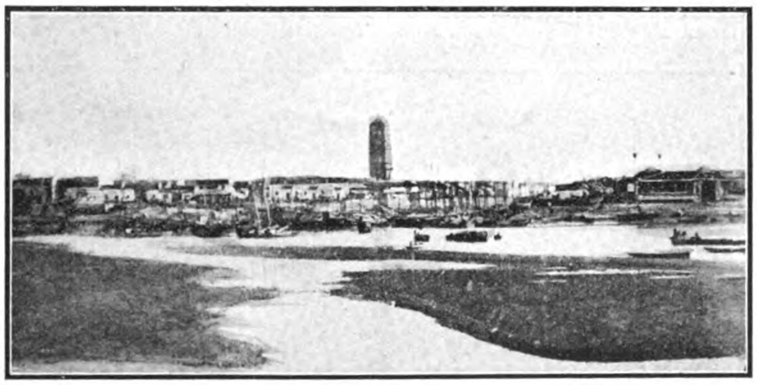
Russian cloth and Spanish stripes. Imports of camlets trebled, but there were decreases in most other lines. Trade in sugar was excellent.

Direct Imports from Foreign Countries—Trade by Articles.—The value of imports of foreign goods from foreign countries amounted to $678,772 during 1913, of which $318,894 came from Hongkong: $270,784 from Japan; $59,671 from the United States and $18,831 from the United Kingdom. The principal articles entering into this trade were sugar, copper and kerosene.

Principal Increases and Declines.—In cotton goods there were increases over 1912 in white shirtings, English jeans, printed chintzes and cotton prints, italians, venetians, crêpes, turkey-red cottons, velvets and velveteens, and India yarn; and decreases in gray sheetings, American and English drills, and Dutch jeans, which have been replaced to some extent by italians and venetians and by native cotton cloths from Shanghai and Tientsin. The demand for plain gray American shirtings continued to decline, and only 140 pieces were imported. In American drills the chief demand was for the grade of 12¾ pounds and over. American jeans have almost disappeared from the market, only 40 pieces having been imported during the year. Attention must be drawn to the cotton yarn manufactured in Shanghai, imports of which have more than doubled during the last two years, and which seems likely to supplant the Indian and Japanese varieties.

In foreign metals there was a good trade, imports of iron cobbles, plate cuttings, and tin slabs showing large increases. Imports of cigarettes have more than trebled since 1910. The Japanese match trade declined more than 20 per cent. Imports of soap and umbrellas showed substantial increases, the largest share of the trade in these two articles going to Japanese manufacturers. Imports of brown and white sugar in 1913 were the largest on record, the Hongkong product, as usual, having the largest share in the trade.

In comparison with the figures of the preceding year a slight increase in bean exports was noted, but shipments of rice, the staple product of the province, declined nearly 50 per cent. Shipments of wheat showed a remarkable rise, and it is hoped that the figures of 1909-10 will again be reached, if not surpassed. The European demand for egg albumen and yolk continued brisk, and the trade in feathers was steady. Shipments of hemp fiber and leaf tobacco doubled during the year, and exports of flour were satisfactory. The trade in groundnuts, medicines, paper, and sesamum seed was also steady, while shipments of rapeseed doubled. Exports of seed-cake nearly doubled, and silk shipments were fairly satisfactory. The trade in cow and buffalo hides and in tea showed a falling off.



View of Wuhu.

Shipping and Revenue.—The number of foreign vessels that entered and cleared at Wuhu during 1913 was 3,105, with a tonnage of 5,140,411, as compared with 3,137 vessels of 6,166,030 tons in 1912. Of the shipping in 1913, 1,937 vessels of 3,234,609 tons were British, 886 vessels of 1,632,422 tons were Japanese, 214 vessels of 246,924 tons were German, and 60 vessels of 15,932 tons were American.

The customs collection during the year was as follows: Import duties, $29,660; export duties, $235,921; coast trade duties, $18,128; transit dues, $51,423; tonnage dues, $3,846. The total collection ($338,978) showed a decrease of $295,348 as compared with the preceding year. During 1912 there was a collection of $186,113 on opium; but no revenue was derived from this source in 1913 because imports of the drug were prohibited. The collection of transit dues in 1913 proved the highest on record and import collections showed a slight gain.

Oil and Electric-Light Companies.—The two oil companies that have installations at Chinkiang maintain branches at Wuhu for the storing and distribution of oil. During the year the American company constructed a tank of 1,780,000 gallons, and the other company two tanks, with a capacity of 200,000 gallons each. The American company operates six tank junks of 3,000 to 6,000 gallons capacity. The bulk oil under the new arrangement can be stored at 20 stations where small tanks are kept for the purpose. The junks in use are of the ordinary native type fitted with steel tanks.

The electric-light company, which has a capital of $125,000, has in operation two dynamos of 600 horsepower, one condenser, and two large pumps. The two dynamos are of German production and the boiler of British make. The foreign machinery now installed represents an outlay of about $45,000. The plant during its first six years of operation failed to show profits, but during the past year the company has met with success. There are 4,200 lights in public buildings and dwellings and 180 street lights. The light bulbs range in candlepower from 16 to 100 and are of the "Osram" style.

Rice Mills.—There are four rice mills in operation at this port, one of which, established in 1912, is driven by electricity. The engine is of 75 horsepower with current supplied by the local electric-light company. There are nine sets of hulling machines driven by electric motors, and these machines mill 59½ tons per day of 14 working hours. In addition there is one husk mill of American design that can clean daily 29¾ tons of grain. In the engine room are installed two three-phase motors of German make. The best season is during the autumn months when day and night shifts are in operation. A gross profit of 7½ cents per 100 pounds is made by the mill, and after deducting working expenses and interest a net profit of 1½ cents odd per 100 pounds is realized.

At one of the other mills the hulling machines are from Shanghai and the engine and boiler from the United States. The mill has been in operation a little over one year and has now installed 24 hulling machines with a capacity of 119 tons per day. The engine is of 160 horsepower. During the past year this mill was operated at a loss, but a good profit is looked for in 1914.

A third rice mill was installed seven years ago and has been successful in reaping a good annual profit. The mill has in operation two motor engines of 50 and 24 horsepower capacity, respectively, both of British manufacture, which consume 15 gallons of kerosene per hour. In addition there is installed a boiler operating a 24-horsepower engine, also of British make. The mill has in operation 15 hulling machines with a daily capacity of 89¼ tons. The total amount of rice milled during the past year reached 8,925 tons, and the net profit was $2,800.

Flour Mill and Knitting Factory.—There is one flour mill in operation at this port, with a boiler of American and other machinery of British manufacture. This mill is capable of grinding daily 21 tons of wheat.

During 1912 a factory was established for the manufacture of cheap cotton singlets, underwear, etc., but little or no business was done during the past year. German and Japanese machines for knitting stockings are now being imported; the German machine selling for $38 and the Japanese product for $17. The sellers of both machines offer bonuses to the factory owners on the number of stockings made by their respective machines, the Japanese firm paying 17 and the German firm 19 cents per dozen pairs. This work is done chiefly by women.

THE CHINESE DOMESTIC LOAN

Considerable interest is being taken in the flotation in China of a Domestic Loan of Mex. $16,000,000. Special inducements were offered to those who might be instrumental in obtaining subscribers to the Loan. A commission ranging from 4 per cent. for the underwriting of $100,000 to 6 per cent. for $1,000,000 and upwards was promised. The Loan is issued under the auspices of the Loan Committee of the Domestic Loans Bureau. This Committee is of a representative character comprising Officials of various Ministries, the heads of the principal Chinese banks and six of the largest bondholders. Provision was made for foreign representatives on the Committee.

If conditions were normal, and it were not necessary to take into consideration the general financial position of the world the Loan would appear an attractive investment. The interest is six per cent. and the issue rate is 88. The currency of the Loan is twelve years, redemption beginning the fourth year. A fund of $2,800,000, part of the annual surplus income of the Peking-Hankow Railway, is to be created as principal for the redemption of the Loan every year, and the interest will be met by a joint appropriation of $30,000 every month by the Ministry of Finance and the Ministry of Communications. It is interesting to compare this Domestic Loan with the Reorganisation Loan of 1913. The interest in that case was five per cent. and the actual amount received by the Chinese Government was 84. The security for the Reorganisation Loan was more tangible and, although the international political situation was not so good as it might have been, conditions were much better then than they are to-day. It would be difficult to say at what rate, if at any, a Chinese loan could be floated on the international market within the next few years. That interest will rise as a result of the war is certain. Debtor nations will have to make extremely attractive offers when they wish to obtain accommodation. Existing loans as they fall in will only be renewed at greatly increased rates. Bearing these facts in mind the terms upon which the Domestic Loan has been offered are understandable. It has, however, to be borne in mind that the creation of a precedent of terms such as these may be found awkward later on, and it would be well for China to reconcile herself to the fact that she is likely to have to pay heavily for financial accommodation in the future.

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DR. ADAMS AND RAILWAY ACCOUNTS

The departure of Dr. Henry C. Adams from Peking for America on September 12 brought to a close the first stage of one of the most important essays at reform in China's railway management that has so far been made. Dr. Adams came to China about a year ago at the special instance of the Ministry of Communications to assist a Commission in the unification of China's railway accounts and statistics; and for this work Dr. Adams was granted a year's leave by the Interstate Commerce Commission, of which he is a distinguished member. We have made frequent reference to the progress of the Commission's work, but so far have published no comments by Dr. Adams, an omission which we are now able to repair by recording the gist of a conversation held with him prior to his departure.

Dr. Adams came to China apprehensive of the growth of considerable difficulties as his work proceeded. The conditions surrounding the creation of what railway system existed in China were, on the surface, extraordinarily complicated by international rivalry and jealousy; and the cosmopolitan nature of the financing and the accounting postulated obstruction from the outset. But to Dr. Adams' great surprise these difficulties quickly proved themselves to be more imaginative than real. A conference between the accountants of the various railways and the Chinese constituting the specially created Unification of Accounts Commission established a harmony that developed as time went on, and proved the existence on the part of the foreign accountants of a genuine desire to have a set of accounting forms created whereby there could be general uniformity in the railway accounting and statistic service of the country. Of this Dr. Adams spoke with considerable pleasure, attributing whatever success had been obtained to the co-öperation of the various foreign accountants.

"The first work undertaken by the Commission, was," said Dr. Adams, "the arrangement of rules and regulations for the control of construction accounting. That is, the engineer's classification of capital expenditures. Those rules have been promulgated and are now in force; and so far as formulated accounting is concerned the Chinese accounts are in better shape in this direction than in any other part of the world.

"The operating accounts were next considered, and just as explicit and detailed rules were devised for auditing the operating revenues as for the construction accounts. All expenses are properly classified, and on every road in the Government's control items of expense will be recorded under the same heads. In fact the headings of the construction and operating accounts are the same—a feature not in existence in any other country. It will give a test which no other country is getting—a test of operation easily applied. These accounts will show the percentage of maintenance cost on capital cost; each year can be found out the percentage of maintenance charges to the original cost, and that analysed by eighteen or twenty sub-heads. These figures cannot be got right off the accounts in use in any other country.

"A third set of accounts will show the true surplus for the year and for each individual road since its beginning. It will supply the figures used in budgets, and thus give what has not been obtainable before—the actual profit, if any. Each year will stand by itself. The income account is, for China, a most important thing; it gives the operation expenses and the amounts due, for instance, with regard to bonds for each year; and a special account is provided to pay off old debts. These accounts provide the control, and with their aid auditors can go to any road and find out what is being done, and what is being made, for the foreign bond-holder as well as for the Chinese. My hope is that this will not create a controversy; the foreign bondholder should regard it as being as important to him as to the Government."

Dr. Adams leaves the country hoping that the result of the labors of the Commission with which he was so happily connected will be thoroughly enforced. He points out that China occupies a unique position. As she is, at the beginning of her railroad activity she has secured in one year what it took twenty years in

other countries to work out. She has, further, had the advantage of their experience and now possesses more advanced accounting forms than they possess. This in itself should be an incentive to the Government to introduce and enforce the use of all the forms framed by the Commission. China has, in the past, employed a multitude of Commissions and has pigeon holed their reports. This Commission has done something tangible and practicable, and it will be extremely regrettable, and criminal short-sightedness, if the Government fails to utilise what it has now secured.

RIVER CONSERVATION

The departure of the engineering party headed by Colonel Sibert for America signalises progress in the work which the Red Cross Society of America is endeavoring to do for China. The party was despatched by the Society to make a report upon the feasibility of flood prevention in the Hwai River region, and after careful examination Colonel Sibert will be able to make a favorable report. Although Colonel Sibert while in Peking had several interviews with the Minister of Commerce, Industry, and Agriculture, and also had audience of President Yuan Shih-kai, he made no formal report to the Chinese with regard to his observations in the famine area. No report will be made, in fact, until the one is complete for the Red Cross Society; but we have reason to believe that Colonel Sibert will recommend proceeding with the work. Then will come the question of finances. It will be remembered that a loan of $50,000,000 (United States Currency) was talked of for this purpose, but the European conflict, with its wrecking of markets, is likely seriously to affect the chances of raising such a charity loan as that which will be required for Hwai River conservation work.

It is certain, in fact, that the development of the scheme will now be materially delayed, but the delay might well be advantageously availed of by China to make investigations which will be of great assistance to the engineers whenever the time arrives for the employment of human energies to overcome the whims of nature which now contribute to such periodical loss. China may, and should, begin at once to obtain data about her rivers. She should have done so long ago, but she has failed in that respect. Now that America has come forward with the explicit intention of assisting in harnessing one of her most erratic streams it is incumbent upon the Chinese to render as much aid as possible. The erection of gauges for the measurement of the rise and fall of river waters, and the registration of rainfall, are two of the simplest and yet most important steps that can be taken. China has signally failed in the collection of data illustrative of the character of her rivers and her rainfall. Missionaries have in some cases regularly recorded the rainfall, but something systematic and general is required. The Missionaries will be only too glad to render further aid to the Government in this direction; a fact which might easily be tested by an offer to supply various missionary stations with rain gauges. In localities where there are no mission stations Chinese in the Telegraph service might have the duty imposed upon them of keeping regular readings, and telegraphing them to some central recording station; and where there are no telegraph stations other officials might easily be selected for the work. A thorough record of the rainfall in given areas will be of the utmost value to any engineers engaged upon conservancy work, and if that is supplemented by accurate records of the heights of water at different places at different periods in given rivers the engineers will have information of tremendous assistance to them. The sooner the Government can appreciate this the better it will be. Nothing can be accomplished without painstaking preparation, but results will come quicker if steps are taken early.

CHINA'S RAILWAYS AND THE WAR

When it first became clear that all the Great Powers of Europe and Japan were involved in the War much pessimism was felt in some quarters in regard to the prospects of railways in China. Great emphasis was laid upon the fact that almost without exception China's railways had been built, or were to be built, with money obtained from abroad. In view of the fact that, whatever the outcome of the War, the victors would suffer economically almost as much as the vanquished, it was pointed out that the money for railway development in China would not be forthcoming, at all events for a very long time.

There is, of course, considerable truth in these contentions, but we do not believe that the situation is quite so dark as it has been represented to be. The money for the construction of the Hukuang lines, or, to be more accurate, the amount that was deemed originally to be sufficient for their completion, has been paid up and is held in the Banks concerned at the disposal of the Government of China. As far as this system is concerned, therefore, there is no reason why the work of construction should not proceed irrespective of the happenings in Europe and in Shantung. This applies also to the completion of the Shanghai-Ningpo line for which ample funds are available. It is true that the agreements for the construction of new lines obtained by the Belgians, British, French, Germans and Japanese will necessarily be held up for some time, but there are other sources from which money can be obtained. The opportunity is open to America to assist China in improving her communications and there is no apparent reason why it should not be taken. In spite of the attitude taken up by the Wilson Administration in regard to the Sextuple Consortium, which led to the withdrawal of the American Group just as the success of the long and tedious negotiations was assured, we believe that any legitimate American enterprise in China would now receive the protection, if not the support, of the State Department. If that be so there is at least a possibility that the American financiers who understand the importance of extending American influence in this part of the world will be prepared to step into the financial breach.

Apart altogether from extraneous aid, China can do something with her own resources. The internal loan now being floated is being taken up with more readiness than was expected. It is true that a feeling of uneasiness still prevails among a considerable portion of the population, and that this is not conducive to the exhibition of implicit confidence such as is shown by investors in other countries. But the hopelessness of success attending any rising against the existing Government should be apparent. The great bulk of the people are desirous of peace. Especially is this true of the merchant class, who have nothing to gain and much to lose by a recrudescence of rebel activity. In such circumstances the uneasiness that exists should disappear, and it would cease the sooner if the moneyed classes recognised that financial support to the Government at this juncture would indicate to the rebel elements that the assistance without which their efforts would be useless would be given, not to them, but to those whom they wished to overthrow and supplant. The natural timidity of the Chinese might prevent for a while any considerable accretion of funds to the Government from domestic loans, but as the sense of security grows such a desirable outlet for money which is not now earning interest is sure to be utilized. Chinese Government loans for railway construction should in particular, appeal to the Chinese investor. He has the object lessons of the Railways of North China and the Peking-Hankow Railway to inspire him. Those lines do considerably more than meet their interest charges and there are others which are rapidly nearing the same satisfactory situation. If the Chinese will only show confidence in themselves and their country, there is no reason why railway construction should not proceed in spite of the stupendous struggle that is bathing Europe in blood.

THE CHOSEN RAILWAY

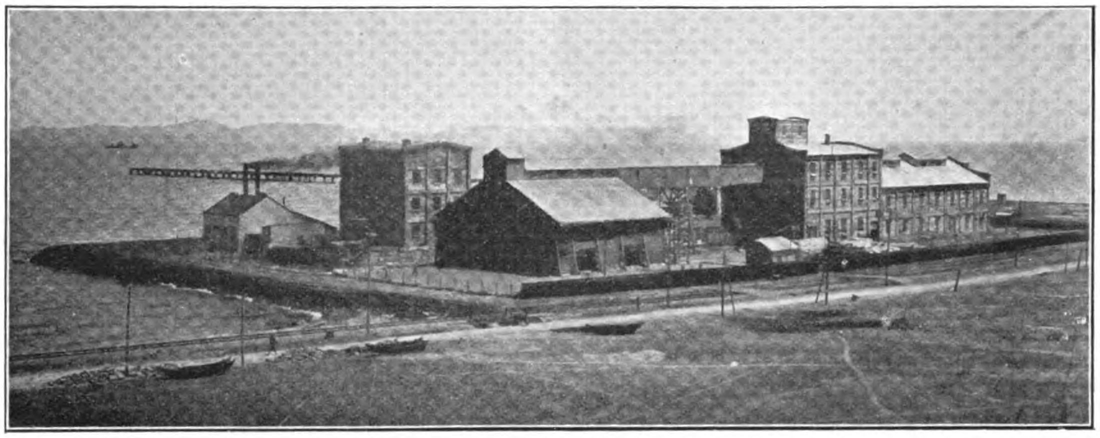
Owing to the irregularity of the express service on the Trans-Siberian route, caused by the present situation in Europe, the Chosen-Manchuria express between Fusan and Changchun, which has hitherto been operated three times a week, will be run once a week for the time being.

THE DEVELOPMENT OF DAIREN

AN EXPERIMENTAL BEAN MILL

Much of the wealth of both North and South Manchuria lies in its vast bean fields. It was only within recent years that the potentialities of the trade in beans were recognized and that the export trade began to be developed systematically. Until 1890 business in this product was purely domestic, but in that year a few shipments were sent to Japan and by 1907 the annual value of beans exported was about £600,000. In 1908 marked success attended the despatch of a trial shipment to England and as a result the value of exports nearly doubled. Of late years exports have been to a value of about £7,000,000, but last year there was some indication of the demand falling off.

While the market for the beans themselves has not fulfilled its earlier promise the demand for bean oil is ever increasing. In Japan there are a large number of bean mills for extracting the oil, notably that established some years ago by Messrs. Lever Bros. This mill is situated near Kobe. To some extent oil extraction has been carried on in Manchuria, but the methods used were primitive and wasteful. A large percentage of the oil was left in the beans and this involved not only the direct loss of the oil not extracted, but the impairment of the bean cake that was made from the crushed material.



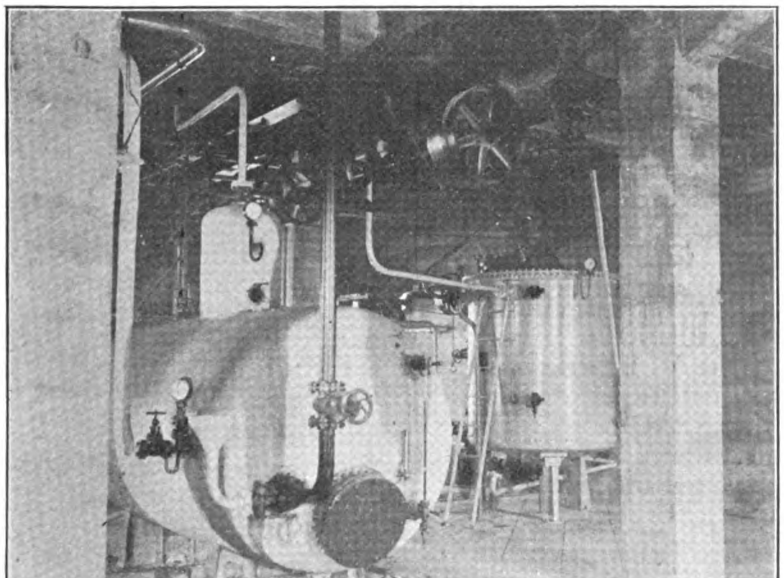
General View of the S.M. R. Experimental Bean Mill.

The South Manchuria Railway Company, whose policy has always been to assist in every possible way the improvement of existing industries in Manchuria, and the development of new fields for wealth production, decided that the importance of the trade in bean oil warranted the devotion of money, time and expert labour to improvement in the methods of extraction. As a result of this determination a handsome experimental bean mill has been erected on the shores of Dairen Bay, west of the Inflammable Goods Pier. The site chosen meets the three main requirements, proximity to steamers, access to an abundant fresh water supply and isolation—in view of fire risks. The buildings contain crushing and extracting rooms, a refining house, offices, boiler house, etc.

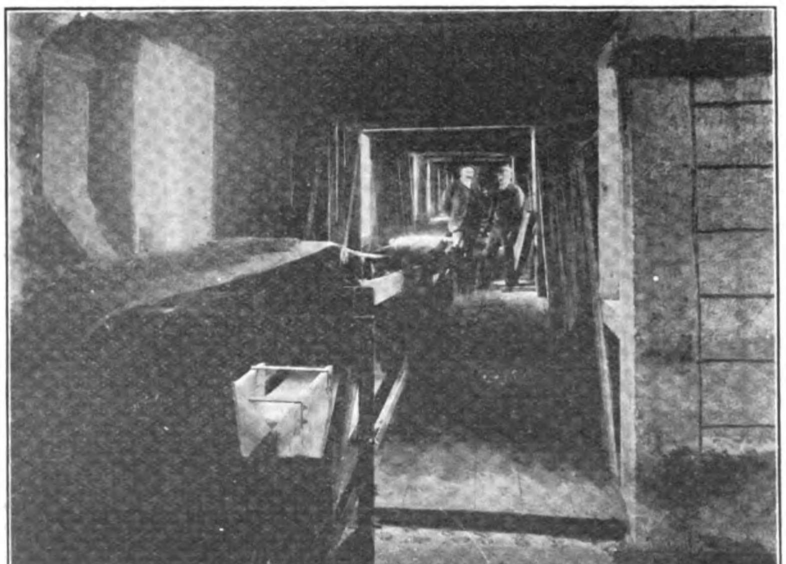
The premises cost Y.100,000 and the machinery Y.250,000. The Crushing and Extraction Rooms are the largest and most important building in the compound of the S. M. R. Co. Experimental Bean Mill. The whole building is fire-proof, being made of steel trusses and concrete. It consists of two sections separated by a partition. One is the Crushing Room and the other the Extraction Room. The Crushing Room is three-storeyed, whilst the other has only a sort of a gallery accessible by two flights of steel steps. The building has a frontage of 180 feet and a depth of 55 feet, with a floor area of 275 *tsubo*.

CRUSHING ROOM

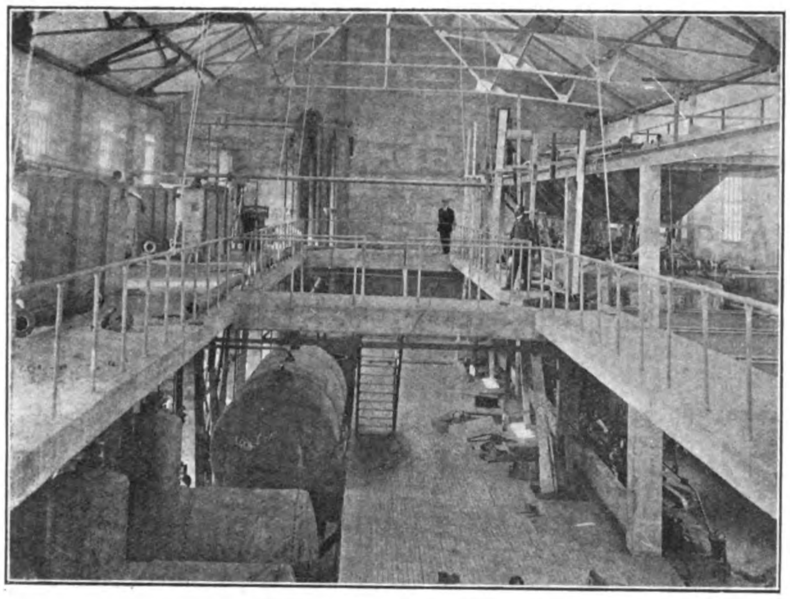
The Crushing Room faces southward slantwise to the front gate. On the third storey it opens into a covered passageway 110 feet long connecting it with the bean silo, or store-house, a building constructed of corrugated iron. Supplies of beans are brought right to the front of the store-house by rail. They are unpacked and are carried up to the level of the top floor of the Crushing Room by means of an elevator or, more correctly speaking, a chain of basket conveyors. The baskets empty their contents into a holder, which in its turn sets its contents loose on a band conveyor in a suitable quantity. The band conveyor moves



Bleaching Kettle.



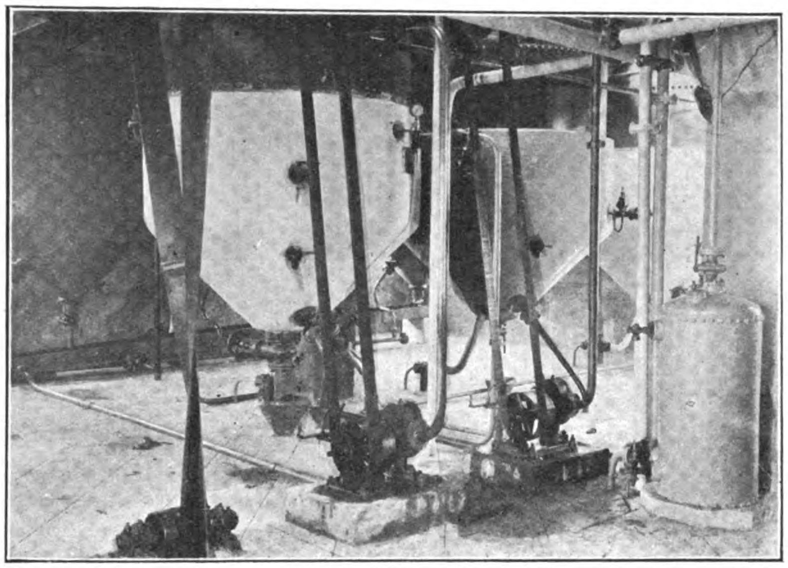
Band Conveyor taking Beans to Crushing Room.



Interior View of Extraction Room.

along the covered passageway into the Crushing Room where the grains are discharged into a holder with a capacity for 90 tons. Throughout it is a wonderful system of basket and band conveyors.

Beans in the holder are liberated through an opening in the bottom down a tube to roll over a sieve in order to get rid of the dust. Part of the dirt, if any, is absorbed by a dust exhauster into a dust chamber. Then the cleaned beans go up to the top floor to come down by a screw conveyor to the first to be weighed by an automatic balance which automatically registers the weight of beans as they pass through it. They next go through preliminary crushers, of which there are two installed on the ground floor. Two drying apparati, each 20 feet long, are on the same floor. One of them is to dry beans and the other bean meal. Beans, roughly crushed, or, to be more exact, flattened, are dried in the steam dryer and then are sent down to the ground floor on which a row of five rollers awaits them to turn them into the form of meal. They are taken up to the top floor again and are discharged into a large holder to be carried through the partition by the band conveyor into the Extraction Room.



Refining Tank and Neutralizing Tank.

EXTRACTION ROOM.

A row of huge extractors stands to receive the raw bean meal transported by the band conveyor. The meal may be emptied into any of the extractors by means of the mobile hopper. It is in these extractors that the fatty substance contained in beans undergoes solution in benzine which is pumped into the extractors from the benzine reservoir installed in the ground just outside the building. After the extracting process has been completed, the solution of bean oil in benzine goes through a filtering operation to be relieved from the mealy mixture and then is put in the miscella tanks. This solution finds its way into a distillatory where the benzine is gassified and escapes with the steam vapor through the pipes into the condensers whence to return to the reservoir. The bean oil is treated under vacuum and rendered absolutely pure and free from the trace of benzine. Then it is led into the oil tanks.

The bean meal left in the extractors is thoroughly steamed, and then taken out of the openings at the bottom, and transported by screw and basket conveyors first up to the level of the top floor of the Crushing-Room and then through the partition into a large meal silo in the Crushing Room. It is sent below to the first floor and into the meal dryer by an oscillating feeding apparatus. The meal then is led into a hexagonal revolving sieve, fifteen feet long, and the finer meal is ready for transportation back to the bean silo by the band conveyor.

The coarser meal is put through a crusher on the first floor and then joins the finer meal.

The meal on arriving at the bean silo is received into a tube and is packed for the market into bags weighing between 120 and 150 lbs. each.

No packing is required for bean cake, which form the residue of beans assumes after the expression of oil, but the labour and time required for breaking the cake before applying it to the soil constitutes a disadvantage which ill makes up for the advantage of dispensing with packing cost.

BEAN MEAL.

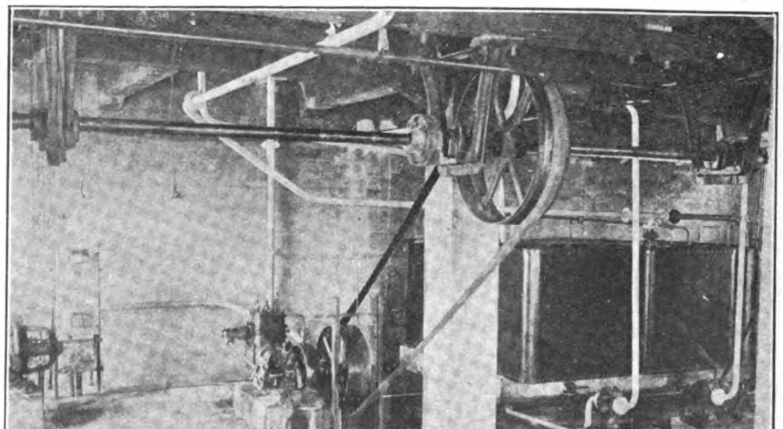
The Bean Mill can put out bean meal suitable for either fertilizing or feeding purposes. The manure meal contains a high percentage of nitrogen and makes an excellent fertilizer for wheat, sugar cane, rice, and fruit trees. Its percentage composition follows:—

Nitrogen . . 7.2—7.6%
Kali . . . . . . 1.7—2.0%
(calculated as K_2O)
Phosphor . . 1.2—1.5%
(calculated as P_2O_5)
Water . . . . 7.3—9.5%

The feeding meal is pure and rich in albuminous substance with an appropriate quantity of fatty oil, the percentage composition being as under:

Fatty oil . . . . 3.2— 3.5%
Albuminoid . . 43.9—47.0%
Water . . . . . . 7.3— 9.5%

The Bean Mill guarantees that the sum total of the oil and albuminoid in the bean meal is never less than 47%, which is the standard requirement of the London Cattle Food Trade Association. The meal, containing a very small quantity of water and



Vacuum Pump and Motor.

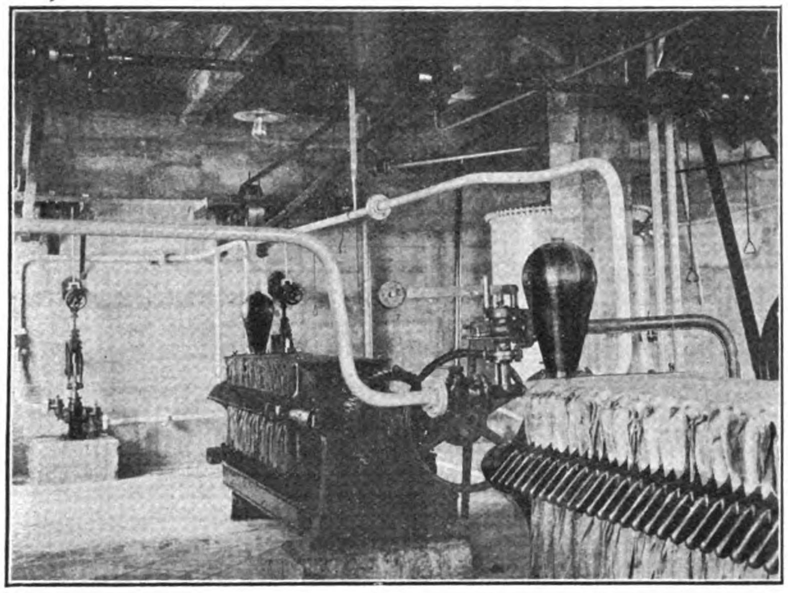
oil, is capable of withstanding the effects of tropical heat and will not deteriorate either in a torrid climate or under a prolonged storage.

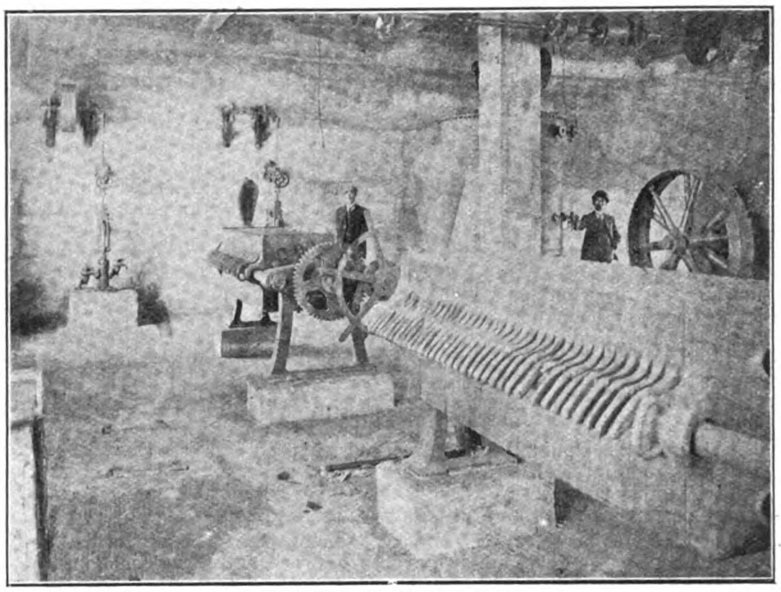
REFINING HOUSE

As the Crushing Room contains a rotating system of conveyors, so the Refining House contains a system of piping through which bean oil is carried up and down in order to undergo sundry chemical and physical processes. It may well be likened to the alimentary canal of the human system with the notable difference that, whilst in the human system all the nutriments are absorbed from the contents of the canal, in this marvel of pipes and pumps, of which we now treat, all the extraneous and offensive matters are extracted from the contents of the pipes, and the remainder flows into the last tank on the ground floor, a refined oil, clear, bright, and sparkling, like amber, odourless and palatable, which is a peer of the product of any like plant in Europe. It contains free acid ordinarily to the extent of only 0.5 per cent. and never above 0.9 per cent. It constitutes a fine material for manufacturing edible oils.

Crude oil manufactured in the Extraction Room is pumped into two huge crude oil tanks installed in the annex adjoining the Refining House. The oil is then taken up to the gallery on the second floor on which three precipitation tanks stand in a row. Each is cone-bottomed and about three metres deep. A steam coil rises up to about a metre from the open top. The dregs run out of the apertures in the bottom ends of the cones into three tanks on the first floor. This thick fluid is sent down into a reservoir sunk underground just outside the building. It is used to make soap stock.

Oil, clarified from the dregs, is sent into a neutralizing or refining tank also on the gallery, in which it goes through a process of alkali refining in order to become absolutely pure and neutral. Next the oil is pumped into two washing tanks arranged abreast of the refining tank. In these tanks the oil is washed by water, which takes away the trace of alkali retained thereby.





Filter Presses.

The oil then passes through a large bleaching tank on the first floor, in which the contents are bleached to a straw-yellow colour by means of fuller's earth under a suitable height of temperature. Then the oil is deodorized in a distillatory installed on the second floor by a patented chemical process. Next the oil is led down to a cooler on the first floor so that an aroma may be imparted thereto to make it more palatable. The oil is then put through a set of filter presses in order to be released from the earth. It is next sent through the other filter presses to be completely liberated from the touch of what water there is still left therein, and thus it acquires a lustre. This puts the finishing touch to the oil, and it is then stored in the tank for refined oil on the ground floor.

THE DEVELOPMENT OF HANKOW

AN IMPORTANT AGREEMENT

An important agreement for a loan for the development of Hankow has been concluded between the Chinese Government and the Peking representative of Messrs. M. Samuel & Co.

The Agreement provides for the issue, as required, of a series of bonds to a total amount of £10,000,000 for the development of Hankow, the initiation of enterprises of industrial importance to that city and the construction of a bridge or tunnel connecting the north bank of the Yangtze with Wuchang. Other works the cost of which will be met by the loan are the construction of a bridge or bridges to connect Hankow and Hanyang and a canal with the necessary bridges between the Han and Yangtze rivers at the back of Hankow city.

The issue of bonds will take place at the end of the war at rates to be determined by the market conditions obtaining at that time. Preference for British materials, having due regard to quality and price, is provided for, and the London office of Messrs. Samuel & Co. are to act as agents for the supply of the materials required.

PHILIPPINE FOREST CONCESSIONS

The Bureau of Insular Affairs, Washington, announces that while there are 200,000,000,000 board feet of merchantable lumber standing on the 60,000 square miles of Philippine public forests, in 1913 there were milled the small total of 80,000,000 feet, of which less than one eighth was exported. The insular director of forestry believes that there is an export market awaiting the establishment of milling enterprises, which would take 300,000,000 feet yearly, mainly of four woods—lauan, apitong, guijo, and yacal. These trees grow to a very large size. A large number are found on a limited area, and their extraction affords an attractive enterprise for a modern logging and milling operation. These public forest lands in the Philippines are not sold, but are developed under a license system. Yearly licenses are ordinarily given small operators for limited areas. The larger tracts are offered in the form of 20 year exclusive licenses, which provide for the removal of timber and minor forest produces without affecting the title to the land. At present 11 such exclusive licenses, popularly called concessions, are in operation, representing American, British, Chinese, German, Spanish, and Filipino capital. A recent timber concession was granted to a Chinese company that will find no difficulty in disposing of its products through its connections in China while the British and German interests find their markets for Philippine woods in India and Europe as well as in China. The Forestry Bureau now has available a number of tracts, ranging in size from 35 to 300 square miles, with one or two of much larger size, awaiting applications,

CHINA'S NEW MINING REGULATIONS

CRITICISM BY THE FOREIGN PRESS

The publication of China's new mining regulations has attracted the attention of the foreign technical press and others. We reproduce three of the articles published on this subject.

The following is from the *Mining Journal* (London):—

We have received recently from correspondents in China copies of the new mining regulations published by the Chinese Government on March 11 last. These are stated to be specially translated by the *Peking Gazette*, but we do not know whether they are to be regarded as an official translation or not. A version is also published in the *Far Eastern Review* of last March, which differs substantially on some important points from the version which we have received. Again, a third version appears in the *Chinese Review* for June. It is therefore obvious that those interested in the question must bear in mind that, as there is no provision such as that inserted in the recent contract between the Chinese Government and the Standard Oil Company recently—that the English text shall be authoritative—they may possibly invite trouble if they do not study the official text. Even if we carry the matter no further than the first two versions in English which we are considering, the *Far Eastern Review* version is certainly decisive of some of the difficulties appearing in the Peking text; but as the regulations as a whole are accepted by our Shanghai contemporary as highly satisfactory, it is difficult to judge whether the translator has permitted himself some latitude of interpretation instead of adhering to a strictly literal rendering of the text. Even apart from these very necessary provisos, the regulations offer many points for criticism from the point of view of foreign interests in relation to mining enterprises in China.

It will no doubt be remembered that so far as this country is concerned commercial relations were largely remodelled under the Mackay treaty, which was finally ratified September 5, 1902. Article 9 of that treaty dealt with mining affairs and was as follows:—

> The Chinese Government, recognising that it is advantageous for the country to develop its mineral resources, and that it is desirable to attract foreign as well as Chinese capital to embark in mining enterprises, agree within one year from the signing of this Treaty to initiate and conclude the revision of the existing Mining Regulation. China will, with all expedition and earnestness, go into the whole question of Mining Rules, and, selecting from the rules of Great Britain, India, and other countries regulations which seem applicable to the conditions of China, she will recast her present Mining Rules in such a way as, while promoting the interests of Chinese subjects and not injuring in any way the sovereign rights of China, shall offer no impediment to the attraction of foreign capital, or place foreign capitalists at a greater disadvantage than they would be under generally accepted foreign regulations. Any mining concession granted after the publication of these new rules shall be subject to their provisions.

A somewhat similar article, though conferring more restricted rights, appears in a similar treaty between China and the United States of October 8, 1903. Generally speaking the provisions in the Mackay treaty have been looked upon, at any rate in this country, as determining the lines upon which foreigners should be granted participation in the mining industry of China. The mining regulations sanctioned on March 17, 1902, after the discussion of the provisions of the treaty, provided that either Chinese or foreigners or a partnership of both might petition for the privilege of opening a mine, but all were subject to the mining regulations of the Imperial Chinese Government. The new Mining Enterprise Regulations just promulgated seem to us restrictive of foreign rights, since the subjects of nations possessing treaties with China may secure mining rights only when in joint business with Chinese subjects, and on undertaking through their diplomatic representatives to be bound by these regulations and other laws connected with them. It would be of much interest to learn whether our Government is satisfied that the new regulations fulfil the condition inserted in the Mackay treaty, and if not, whether they are making any representations on the subject.

Turning to the regulations themselves, they do not strike us as the work of men familiar with the practice of mining or with the legislation existing in leading mining communities, and whatever may be the case with regard to the Chinese themselves, European capital is not likely to be attracted into the country by the issuing of new regulations unless they be of a character which can be understood and appreciated. The rules contemplate grants for "mining enterprise," which includes prospecting, actual mining, and other business connected with them, and of "Mining rights," which are defined as rights to prospect and operate mines. Construing the terms of the regulations strictly, operations such as smelting, piping, and the like would appear to be excluded from the mining right, and we cannot find any section conferring the right of mining enterprise upon foreigners. Are these regulations, therefore, not complete in themselves as determining the position of foreign interests in regard to the mineral industry? Again, there is a classification of "minerals" into four classes, which appears to suffer through defects usual in such arbitrary classifications. Those of the first class are almost entirely metals, but include coal, diamonds and precious stones. Class 2 also includes diamonds and a considerable number of earthy minerals. Class 3 consists mainly of limestone and structural material; while Class 4, consisting of salt and kerosene oil, are reserved for Government exploitation. It is obvious that numerous difficulties might arise in the construction of these clauses. Apart from the inclusion of diamonds in two classes (which we should say does not appear in the version of the *Far Eastern Review*), how are we to class petroleum, which might be made to yield pitch, heavy fuel oil, lubricants and gasolene, and little or no kerosene? Then, again, might not the sulphur in a highly pyretic ore be considered as determining the class rather than a small content of gold, copper, iron, &c.? Possibly the difficulty may be only due to faulty translation, but it must be borne in mind. It is provided that minerals not specified may be classified by the Minister of Agriculture and Commerce, but as the rate of taxation varies with the class it would be more satisfactory to be assured on the point in advance.

An important point not determined in the regulations is the ownership of mineral rights. By Article 8 no permit from the authorities is required in the case of "the various mineral resources owned by the public." Our contemporary, the *Far Eastern Review*, states, in commenting on the regulations, that mineral deposits are now declared as belonging to the State, but we do not know on what authority this statement is made. There is obviously material for much litigation on a point such as who are the owners of mineral rights in a particular instance.

The regulations appear to contemplate, though not in express terms, two stages—viz., prospecting and mining. Permission must be obtained from the Government to start operations, but it does not appear that there is any means of compelling the officials to grant such permit, though in the case where the grant of the right to mining enterprise is refused an appeal may be made to the Minister of Agriculture and Commerce from an adverse decision. When the Government's sanction to prospect or work mines is given, a mining area is constituted, the extreme limits of which are 10 square li or say 3 miles for coal, and 5 square li or 1½ square miles for other minerals. Mining rights when acquired cannot be surrendered to others in part. We do not know the effect of such a provision on the frequent practice of disposing of a portion of a property to another company.

Curiously enough no provisions are made as to the beaconing of claims or their survey, though maps and plans of the interior of the mine must be kept, and if not followed involve forfeiture of the mining right.

After the necessary permit to prospect is given a period of two years is permitted, and within which a petition to operate the mine must be presented. The authorities must be satisfied that the place is suitable for mining operations. Succeeding sections deal with possible difficulties which may arise before a petition to operate a mine is granted, but as the text of the two versions varies considerably, and the procedure is in any case somewhat obscure, we cannot go further into details.

Article 46 provides that a mining right shall be cancelled if operations are not begun within a year or are suspended for that time; if the enterprise injures public interest; if police orders as to precautions or suspension of operations are not obeyed; if plans and descriptions are not followed; if the mining tax is not paid when due; or, finally, if sanction has been given to mine under mistake. According to the *Far Eastern Review* version an appeal against cancellation may be brought before the Minister of Agriculture and Commerce from the cancellation of a mining right, but in the Peking version such appeal is confined to the right of mining enterprise.

Considerable provision is made for the miner obtaining the necessary way-leaves to operate his property, and in the event of surface owners being hostile an appeal is given to the mining authorities.

Mine owners must make provision for workmen who are injured in the course of their employment, and the hours of labour may be regulated by the Minister of Agriculture and Commerce.

Taxation consists of a tax on the mining area in addition to the land tax and a royalty. The rate of the mining area tax is 30 cents per annum for each mow (800 square yards) for minerals of class 1, and 15 cents for minerals of class 2. The royalty is 1½ per cent. of the market price on the mine of ores under class 1, and 1 per cent. on ores of class 2.

Article 86 gives power to compel the mine owner to employ experts or to change those employed.

By Article 93 foreigners who may have been partners of Chinese citizens in mining or employed by them must settle their disputes under the decision of the Director of the Mining Supervision Office.

In conclusion, it is provided that these regulations come into force from the date of promulgation which, as we have mentioned, was March 11 last—and within six months all the mines holding previous certificates must submit petitions for re-registration in accordance with these regulations—but the contracts and agreements made previously for the raising of foreign capital for the development of the mines are to continue in force as before.

As we have said, these regulations do not strike us favourably; they appear confused and arbitrary, as well as incomplete in many directions; but what is most important is, what organisation is created to carry them out? With goodwill difficulties may be smoothed over and amendments made. While there is a Mining Supervision Office, and even a European

Mining Adviser in the person of Mr. Andersson, a Swede, the ultimate decision in most cases rests with the Minister of Commerce and Industry, whose practical acquaintance with mining is an unknown quantity. Perhaps the most important provision is that which requires at least a half participation by Chinese interest in every mining enterprise. The *Far Eastern Review* claims to be informed by the Minister of Commerce and Industry and by the head of the mining department that where the Chinese fail to subscribe a moiety foreigners may subscribe the balance. If this be so the administration does not seem to know its own mind, as the assurance is in flat contradiction of No. 4 of the general rules. This rule is also in contradiction to the policy which the Chinese Government has itself adopted in regard to its contract with the Standard Oil, which gives that company 55 per cent. of the capitalisation, with a possible still further increase. In view of the great mineral resources of China and the rapidity with which such can be made productive of large revenue, which China is so urgently in need of at the present time, we think that the Government has certainly been ill advised in many provisions of its fresh regulations, for while undoubtedly some improvement on older regulations, which were generally accepted as frankly dilatory in their character, they are not such as it seems to us foreign capital is likely to consider favourably. China is far more likely to get rid of the concession hunters whom she fears by adopting an impartial system of mining tenure for all comers than by embracing a system which forces her, for lack of revenue, to give such a monopoly as that recently arranged with the Standard Oil Company.

The *Mining and Scientific Press* makes the following comment:—

Many of our readers will remember that in the treaties which were made following the outbreak in 1900, it was specified, among other things, that China should prepare a code of mining regulations which would permit foreign capitalists to enjoy the same rights in China as they do in other countries. This was especially provided in the Mackay treaty of 1902. In carrying out the terms of this treaty, delay after delay has occurred. Sets of regulations have been drawn up by bureaus at Peking and submitted to the representatives of the treaty powers, only to be rejected. In the latest reorganization of the government at Peking, Chang Chien has been appointed Minister of Commerce and Industry, and has created a Bureau of Mining, of which D. T. Yang is the head, and the distinguished director of the Geological Survey of Sweden has been appointed adviser to the Mining Bureau. Minister Chang has exhibited a great deal of interest in the development of the mineral resources of China and has given out various suggestions as to their development. Among others, a new set of mining regulations has been drawn up. These have to be submitted to the treaty powers, but they are so much an improvement over any that have previously been composed that they stand some chance of being sanctioned. The regulations are too detailed and require too much space to give in full, but it will be worth while to summarize some of the most important features.

Chapter I covers general rules and provides that citizens of the Republic of China may secure mining rights, and citizens of foreign nations may also secure them when doing joint business with citizens of China. Foreigners wishing to engage in mining must present to the Director of the Mining Supervision Office a certificate by their consul showing that they are willing to abide by Chinese mining regulations. Salt and petroleum are reserved as government monopolies, but the various other kinds of mineral substances are open to general exploitation. In the case of coal, metals, and precious stones, the mining rights are separate from the ownership of the land. In the case of the non-metallic minerals the ownership of the mining rights goes with the ownership of the land.

Chapter II defines areas on which mining may be conducted. As in all previous regulations, it is provided that mines may not be opened in close proximity to tombs, temples, fortifications, and public utilities without permission. The distances, however, are much decreased, a maximum of one-third of a mile now being the rule. It is provided that the claims shall be bounded by vertical planes. A coal-mining area is allowed a minimum of 54 acres and up to 1,180 acres. The areas allowed for other mines vary between 10 acres and 540 acres.

Chapter III deals with mining rights. This contains a great many clauses, and is rather complex. It is interesting to note that the petitioner for a mining area must prove that the area for which he applies does contain the mineral which he wishes to exploit. Provisions are made for conflicts and also for the exploitation of two different minerals in the same area by different groups. Where more than one person applies for mining rights for the same area, they must be given to the first applicant. There are possibilities for a good deal of difficulty in the regulations. Thus, for example, Article 20 says "mining rights should not be surrendered to others in part." What effect this might have on the sale of stock in a mining company is open to question. Similarly, Article 44 says that the operators of mining enterprises "should from time to time submit the working plans, drawings, and explanations, to the Director of the Mining Supervision Office for decision. The possessor of the mining right shall operate the mines according to the plan and description passed by the Director of the Mining Supervision Office. With regard to the plan and description for the above, no change shall be made without the approval of the Director of the Mining Supervision Office."

The presence of such a trouble-making clause in the regulations is, of course, clear evidence that the persons who drew them up are without any competent knowledge of mining. It would be entirely impossible for any government bureau to undertake the detailed supervision of the work of operating every mining company in China. The greatest difficulty, aside from the delay which might be entailed by an attempt to enforce this clause, is the fact that neither the Minister of Commerce nor the present head of the Mining Bureau has any knowledge of mining whatever, Mr. Yang being a graduate of a law school in Japan, and it is highly probable that such a condition is likely to persist. The difficulties of a company which tries to secure approval of its plans from officials who know nothing of mining are easy to imagine. The mining right may be canceled if the operations are not conducted with reasonable diligence, if the tax is not paid, or if suitable precautions for the safety of employees and the public are not followed. It may also be canceled "if the plans and descriptions submitted are not followed" or "if the mining enterprise injures the public interest." It is evident that these last two provisions open a fertile field for the oppression of mining operators by the officials, and, indeed, the whole series of regulations have the air of being drawn up more with the idea of developing 'squeeze' than of developing the mineral resources.

Chapter IV deals with the land used for mining purposes and provides that the proprietor of the mine may, under proper regulations, use the land of others in order to carry on his own necessary operations. An adequate security may be demanded by the owner of the land for any such use of his property. Chapter V deals with miners, their duties, wages, compensation, injury, and so on.

Chapter VI deals with mining taxes. It provides for two classes of tax: on the area and on the output. The area tax for metal mining amounts to $0.45 per acre per year. This is in addition to the ordinary land tax, which is paid everywhere throughout China. On the product of metal mines, 1½ per cent of the market price at the mine shall be collected as tax. For non-metallic minerals, 1 per cent. is collected. The regulations do not clearly explain whether the tax is on the gross or net value of the output.

Chapter VII covers provisions for policing the mines, and it similarly contains clauses which might lead to a good deal of difficulty on the part of the operator. Thus article 86 provides that the Minister of Commerce or Director of the Mining Bureau may demand the employment or change of experts employed by the mine operator. Chapter VIII deals with judgments, complaints, and lawsuits. Article 93 provides that if foreign citizens in partnership with Chinese citizens in mining affairs have any dispute, the case must be settled by the decision of the Director of the Mining Supervision Office. It is scarcely probable that in the present state of government in China the treaty powers will agree to any such stipulation as this.

Chapter IX deals with punishments for violations of the provisions of the regulations, and closes with a provision that contracts and agreements previously made for the raising of foreign capital shall continue in force according to the conditions under which they were made.

While on the face of it the new regulations look much more favorable than any that have so far been proposed, as a matter of fact they fall a long way short of leading in any practical degree toward the adequate development of Chinese mineral resources through the aid of foreign capital.

An editorial comment is made by the *Hongkong Daily Press* in the following terms:—

China's Mining Regulations are fast becoming proverbial: it would be interesting to ascertain how many fresh editions there have been during the last ten years, but it would require a very skilled and patient investigator to discover in them any evidence of a serious attempt to grapple with a real need. The process of their production must by now be practically mechanical—scarcely a year passes without an announcement, with a great flourish of trumpets, that the whole matter is to be dealt with *de novo* and that workable rules are at last to be introduced, and then, when the period of gestation is accomplished, there is given to the world a *rechauffe* of the old discredited regulations decked up with a few fine phrases. It is no surprise to see a few days ago that "Chang Chien has requested the President to examine the new Mining Laws and to introduce a searching revision," but it needs no great prophetic gift to forecast what the result of this investigation and revision will be. It has become a fixed article of faith with China's statesmen that, whatever else may be changed and modified, those provisions of the Mining Regulations that make foreign participation impossible must in their essential features remain intact. That this policy involves a breach of international faith does not cause them the least misgiving; they regard it as quite immaterial that China is by Treaty bound to recast her Mining Law "in such a way as, while promoting the interests of Chinese subjects and not injuring in any way the sovereign rights of China, will offer no impediment to the attraction of foreign capital nor place foreign capitalists at a greater disadvantage than they would be under generally accepted foreign Regulations." It is, we are aware, fashionable to regard the Commercial Treaties of 1902 and 1903 as being to a large extent a dead letter, but they have never been in the slightest degree cancelled or modified, and until they have been thus formally abrogated, they are valid, and China is, by all international usages, as much bound to keep her promise with regard to the admission of foreign participation in the development of her mines as, say, Great Britain is to fulfil the stipulations of the 1911 Agreement for the cessation of the Indian opium trade. China always shows herself a strict creditor in demanding the most exact fulfilment, and even a little more, of Treaty obligations by other Powers, but her views change diametrically when it is a question of keeping promises herself. The whole matter has been threshed out again and again, and there is now little hope of China ever voluntarily redeeming her pledged word in this connection. It is difficult indeed, to contemplate China's attitude without despair: there is no possibility of her mineral wealth being utilized through the agency of Chinese capital, yet her one aim and object is to make impossible the employment of foreign capital for the purpose. No Chinese mine-owner possesses sufficient funds to sink shafts, instal pumping and winding machinery, and make all the other improvements and innovations that would be

requisite if his mines were to be worked to an adequate degree of efficiency, nor would any Chinese capitalist be anxious to embark on an enterprise that must, in the best of circumstances, keep his capital locked up for several years before he could look for any return. Such funds could only be raised by a syndicate, but that is a form of enterprise of which the Chinese are, with reason, very shy, for not only does it involve entrusting a few people with the handling of large sums of money, but the concentration in one spot of a large amount of capital would be an irresistible temptation to rapacious officials with capacious pockets. Hence the only possibility of salvation lies in attracting foreign capital, either by means of concessions or of joint foreign-Chinese companies, but that is the very thing that China makes, in her Mining Regulation, every effort to prevent. It is all an old tale, and our only excuse for reverting to it is the necessity of never allowing China to forget that she has, in a formal and binding international instrument, solemnly pledged herself to recast her Mining Regulations "in such a way as while promoting the interests of Chinese subjects and not injuring in any way the sovereign rights of China, will offer no impediment to the attraction of foreign capital nor place foreign capitalists at a greater disadvantage than they would be under generally accepted foreign Regulations."

THE FISHERIES OF MINDANAO AND SULU

BY DR. ALVIN SEALE, BUREAU OF SCIENCE, MANILA

The Governor of the Department of Mindanao and Sulu has under his care two great farms. One is on land and grows coconuts and other things, the other is in the sea and grows pearls and other things.

The land farm is considered as doing well if it employs 500 men and pays all expenses. The sea-farm employs over 5,000 men and last year its harvest was valued at P.2,000,000.

We are naturally the most interested in the principal product of our farm, therefore we will consider the pearl fisheries first. The pearling fleet at the present time consists of 73 vessels. These secured, during the past year, pearl shell to the value of P.349,478 and pearls with a value estimated at P.1,000,000. The cost of harvesting was P.266,400 and nine human lives.

The life history of the Philippine pearl oyster in brief is as follows:—The mother shell gives off into the water thousands of minute round egg cells. Should these by chance meet the microscopic cells given out into the water by the male oyster they become fertile and proceed to grow. They develop small hairs which enable them to swim about, and are doubtless carried many miles by the tides and currents. The shell begins to form at the end of the second day, and in about 8 days the young oysters settle down and attach themselves to whatever offers. They seldom move far from the place where they attach. They continue to grow for ten or twelve years, although they are sexually mature in two years and attain the legal size of 7 inches in four or five years. The rapidity of their growth depends largely on their location and the abundance of the small microscopic marine animals upon which they feed.

For its proper growth, the Philippine gold-lip pearl oyster requires a warm, shallow sea of from 1 to 400 feet in depth where the ocean currents are strong and the specific gravity of the water is about 1.0201. The bottom must be of sand or coarse gravel made up of dead coral or broken shells.

Practically all of the area from Mindanao to Borneo is one great pearl bed. The most productive portions, however, are more or less localized and centered about various islands.

Some of these pearl beds lie in shallow water and have been fished constantly for over 100 years. One would naturally expect such beds to be exhausted; such, however, is not the case. I was on a pearl boat operating directly in front of Jolo, and for the first dive 12 shells were secured, at the second dive 7, and third dive 7. In all 26 shells were secured in 60 minutes of actual work. The average weight of the shells was 1 kilo each. The value was P.20.00. 2 small pearls were found.

The explanation of the fact that the shallow water beds have not been exhausted after many years of fishing lies in the fact that they are constantly supplied with young shell from adjacent beds in water too deep for the divers to reach. Such I found to be the case in the Jolo beds, and no doubt it is true of the others.

All of the pearl beds are surrounded by areas of deep water where there is an abundance of adult shell. All the divers tell of the beds seen by them in waters too deep to work. These form the *mother beds* and from them are given off million of young pearl oysters which are carried by the tides and currents all over the waters of the archipelago. No doubt many are carried into great depths and lost, others are smothered in the sand or thrown ashore to die on the beach, but many settle on the shallow beds and keep a constant supply of oysters coming on toward maturity. I believe that with the present system of fishing, where the diver can only work in water of 25 fathoms or less, there is no great danger of the pearl beds becoming exhausted.

The Philippine pearl oyster yields a high percentage of pearls. The pearlers can usually pay all running expenses by the sale of the shell and the pearls are regarded as clear profit.

The Japanese are the only people who have, up to the present time, made a commercial success of the pearl oyster farming and the growing of culture pearls, their method, in outline, being to insert some foreign body in the living oyster. This body is covered by layers of the pearl-forming fluid called "nacre" which hardens and forms a pearl. The method of growing pearls of as good a luster and shape as those found in nature, however, was perfected only last year by Professor Fujita of the Imperial University of Tokio.

The pearls and pearl shells, however, are but a portion of the harvest of the sea-farm. We have in addition, trocha or top shell valued at P.103,595, dried fish valued at P.69,721, trepang valued at P.35,107, tortoise shell valued at P.34,947, turbon shell valued at P.21,860, and shark fins valued at P.16,088, besides fresh fish with estimated value of P.300,000. All of which helps to swell the total value of the sea harvest to over P 2,000,000 per year.

Now let us consider for a moment how these facts can be turned to the profit of the local community, and help in establishing permanent prosperity in Zamboanga or Jolo. Each pearl boat uses an average of P.60 worth of commissaries each month; the entire fleet, therefore, spends for this item alone over P.4,300 per month, chiefly in the local stores. The larger portion of wages of all the employees on these boats is spent locally. This amounts to about P.135 per month for each boat and gives a total of over P.200,000 per year.

Now there are other industries which could be easily built up from fishery products, and I wish earnestly to recommend these to the attention of local people. Take for instance the item of tortoise shell. P.35,000 worth is exported from the Department and as much more from northern ports. This goes to Japan where it is manufactured into combs, ornaments, etc., and after paying 50% duty is sold at a good profit in the United States. A small factory operating in Zamboanga or Jolo would require a very small outlay of capital and this 50% duty would then be clear profit. Or take the sardine industry. Sardines to the value of P.500,000 per year have been imported into the Philippine Islands and yet the water of the Islands swarm with excellent sardines. Here is what should be done. The people prefer their sardines put up in tomato sauce. Very well, San Ramon grows the best tomatoes I have ever eaten. The desire of the Government is to stimulate agricultural enterprise. Let San Ramon or the people grow the tomatoes, start a factory combining the manufacture of tomato sauce and canning sardines; this will give two products to put on the market for each of which there is an active demand. Or take the sponge industry. I found the New York sponge dealers saving even the little scraps and trimmings from sponges, because there were not enough sponges to supply the demand, and here are the waters of the Sulu Archipelago with an abundant supply of good sponges to be had for the gathering and curing. If this is done in a careful manner, and the sponges are graded and carefully marketed, a fair profit could be secured from them.

Success in any of these enterprises requires just what is required in any successful commercial uudertaking, and that is a good mixture of ginger, capital, and common sense.

RECLAMATION SCHEME IN BRITISH NORTH BORNEO.

The Chairman of the British North Borneo Company speaking at the 63rd half yearly meeting in London on July 14 said: With regard to the Jesselton reclamation scheme, which is being carried out by contract, and which comprises, *inter alia*, land reclamation (which should be very remunerative), the improvement of Jesselton Harbour, and a water supply for the town, I hope it will result in Jesselton's becoming a favourite port of call for vessels *en route* to China and elsewhere, and take the place which was formerly occupied by Labuan. The work has not been carried on with the celerity which we expected, but it is now being proceeded with more rapidly than was the case until December last. The 106 families which comprised the first batch of Northern Chinese immigrants have settled down very comfortably, and I understand that Dr. Sia, who was deputed by the Chinese authorities to accompany them, is satisfied with the conditions under which they are living. The Court have been in correspondence with the Governor regarding the introduction of a further contingent but no definite steps have yet been taken in that direction. But the success of the experiment seems to be assured, and there is every reason to hope that the scheme will be pursued on an increasing scale from time to time. The principal doubt was whether the Northern Chinese—whom we specially desire to introduce as settlers, because of their industrious habits and knowledge of agriculture—would be able to stand the climate of North Borneo, but this doubt, I may say, is practically dispelled.

Messrs. Andersen, Meyer & Co., of 4 and 5 Yuen Ming Yuen Road, Shanghai, have accepted the agency of the National Carbon Co., of Cleveland, U.S.A.

PANAMA-PACIFIC INTERNATIONAL EXPOSITION

BREAKING GROUND FOR THE CHINESE VILLAGE PAGODA AND TEA GARDEN

China, the newest republic, gave the citizens of the oldest republic air example in ground breaking exercises on "The Zone" of the Panama-Pacific International Exposition on July 17. It was the prettiest ceremony that has marked the pre-exposition period and several thousand persons gathered around the ropedin area to see the mingling of old and new world customs.

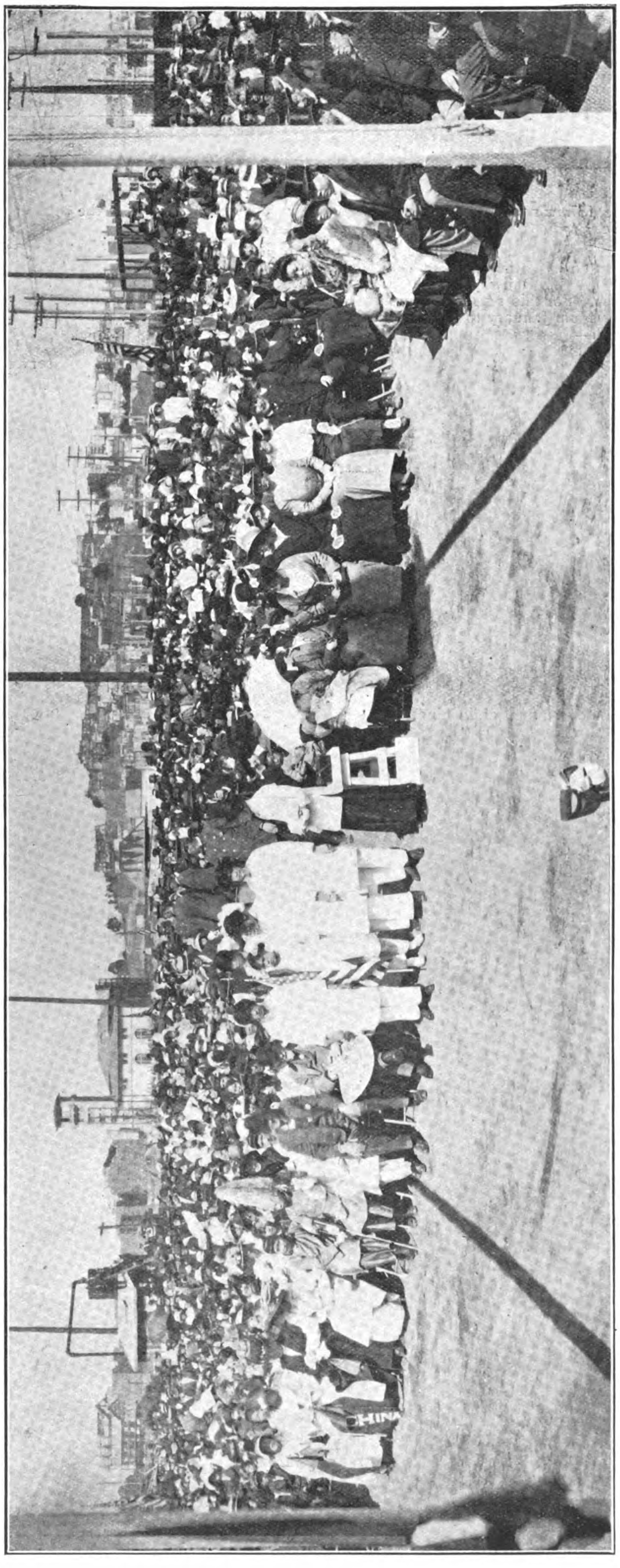
The day marked the formal beginning of the Chinese Village Pagoda and Tea Garden, which is to have an attractive corner on the 65 acres given over to concessions. The program at the site was preceded by a parade of several hundred in gaily decorated automobiles through the business streets of San Francisco.

Consul General S. C. Shu, of China, was one of the speakers. Representatives of the governor of California, the mayor of San Francisco and of the Exposition made short addresses. R. T. Park, managing editor of the *Chinese World*, was master of ceremonies.

Chinese girls in native costume sang "I Love You California" and "America," and two young women, Misses Mary Wong and Mary Wing, raised the flags over the site. After ground had been broken with a silver spade the Chinese girls and others sprinkled pop corn over the ground to bring good luck.

The Chinese Village Pagoda and Tea Garden promises to be one of the most beautiful structures on the grounds and will cost G. $48,000 without the furnishings, which are to represent an outlay of G. $200,000.

In the accompanying photograph of the crowd taken from the speakers' stand a few of the Exposition attractions are shown in course of construction.



Breaking ground for the Chinese Village Pagoda and Tea Garden at the Panama-Pacific International Exposition.

CANTON-HANKOW RAILWAY

It is reported that arrangements have been made whereby funds for the construction work of the Canton-Hankow Railway have become available. Some little difficulty was experienced as the proceeds of the loan were under the control of the original Quadruple Group and it was necessary to obtain saction for the use of the funds from each individual member of the Group. Now that this has been obtained the work will progress as rapidly as possible under the direction of Dr. Jeme Tien-yu.

SALT INDUSTRIAL BANK

The advisability of establishing a salt industrial bank has been suggested by Mr. Chang Chen-fang, Financial Adviser to the President. It is claimed that the establishment of such a bank would lead to the more speedy collection of the salt revenue, besides assisting the salt industry in various ways.

Lieut.-General Baron Satoru Nakamura has been appointed Governor-General of Kwantung in succession to Baron Yasumasa Fukushima, who was promoted to the rank of full General and placed on the reserve list at the same time.

CHINESE GOVERNMENT RAILWAYS

PEKING-MUKDEN LINE

The following is the report of the Peking-Mukden Railway for the Half-Year from 1st January to 30th June 1913:—

The National Assembly having fixed the 30th June as the date on which the fiscal year of the Chinese Government will be closed in future, the accounts of this Railway have been made up to that date to comply with the order. For this reason the present report only deals with six months working from January to June and the results are compared in the following table:—

	Half year ending 30th June 1911	1912	1913
Earnings...	5,330,328.46	6,105,993.96	7,829,588.32
Working Expenses	1,846,836.41	1,983,641.02	2,088,434.35
Balance after paying Working Expenses	3,483,492.05	4,122,352.94	5,741,153.97
Ratio of Working Expenses to Earnings	35%	32%	27%

MILEAGE.—The mileage open to traffic is 605.76 miles.

LOANS.—The next repayment of the Imperial Chinese Railways 5% Gold Loan of 1899 falls due on 1st August, 1914.

The service of the Gold Loan of the South Manchurian Railway has also been duly met.

EXCHANGE.—The monthly remittances to London in settlement of Loan service were made at the average rate of 2/10⅛ per Tientsin Tael.

LI TSOI-CHEE
Managing Director,
CHU KIN-HOW
Associate Director.

STATEMENT OF ACCOUNTS

CAPITAL AUTHORISED AND CREATED

Details	Capital Authorised: Stock and Shares	Loans	Total	Capital Created: Stock and Shares	Loans	Total	Balance: Stock and Shares	Loans	Total
	$	$	$	$	$	$	$	$	$
Chinese Government and Chinese Shareholders	21,994,428.57	—	21,994,428.57	21,994,428.57	—	21,994,428.57			
Under Loan Agreement 1899 £2,300,000 ...	—	27,600,000.00	27,600,000.00	—	27,600,000.00	27,600,000.00			
Under Japanese Loan Agreements, South Manchuria Rly. Loan, 1909, Gold Yen 320,000...	—	377,142.86	377,142.86	—	377,142.86	377,142.86			
$	21,994,428.57	27,977,142.86	49,971,571.43	21,994,428.57	27,977,142.86	49,971,571.43			

STOCK AND SHARE CAPITAL CREATED SHOWING PROPORTION ISSUED.

	Amount Created	Amount Issued	Amount Unissued
	$	$	$
Chinese Government and Chinese Shareholders	21,994,428.57	21,994,428.57	—
$	21,994,428.57	21,994,428.57	—

CAPITAL RAISED BY DEBENTURE STOCK

		$
CHINESE GOVERNMENT PEKING-MUKDEN 5% RAILWAY LOAN FORMERLY CALLED IMPERIAL CHINESE 5% RAILWAY LOAN, 1899 (original amount of Loan £2,300,000).		
Existing at 31st December, 1912...	£ 1,840.000	22,080,000
Existing at 30th June, 1913	£ 1,840.000	22,080,000
Of which there was invested in the Hongkong & Shanghai Bank, London, at 31st December, 1912	£44,995.15.5	539,949.28
Withdrawals	£44,995.15.5	539,949.28
Leaving invested in the Hongkong & Shanghai Bank, London, at 30th June 1913	—	—
SOUTH MANCHURIA RAILWAY LOAN, 1909 (original amount of Loan G. Yen 320,000.00).		
Existing at 30th June 1913...	G. Yen 257,777.81	

RECEIPTS AND EXPENDITURE ON CAPITAL ACCOUNT

TO EXPENDITURE	Total to 31st Dec. 1912	Amount expended in Half Year to 30th June 1913	Total to 30th June 1913
	$	$	$
Lines open for Traffic	49,635,095.65	—	49,635,095.65
Steamer...	336,475.78	—	336,475.78
$	49,971,571.43	—	49,971,571.43
Balance...			Nil
			$ 49,971,571.43

BY RECEIPTS	Total to 31st Dec. 1912	During Half Year June 30th 1913	Total to 30th June 1913
	$	$	$
Shares	21,994,428.57	—	21,994,428.57
Debenture Stock	27,600,000.00	—	27,600,000.00
South Manchuria Rly. Loan	377,142.86	—	377,142.86
			$ 49,971,571.43

DETAILS OF EXPENDITURE ON CAPITAL ACCOUNT.

Nil

EXPENDITURE ON CAPITAL WORKS PAID FOR FROM REVENUE

Betterments

Rolling Stock	234,278.46
Tongshan Works...	16,086.18
Additions to Stations	19,235.54
Staff Quarters	12,456.59
Carriage and Locomotive Sheds	32,440.90
Other Buildings ...	9,303.82
Standard Oil Siding	19,253.62
Other Sidings	18,238.50
Doubling track from Huang-ku-tun to Mukden Station S. M. R.	41,532,49
Miscellaneous	3,219.45
Expended during Current Half Year ...	406,045.55
Expended in Previous Years	9,358,544.55
	$ 9,764,590.10

REVENUE ACCOUNT

Dr.			*Cr.*	
To Maintenance of Way, Works and Stations as per Abstract A	534,004.85		By Earnings	
„ Locomotive, Carriage and Wagon Expenses as per Abstract B.	993,837.48		Passengers	3,058,717.39
„ Traffic Expenses as per Abstract D.	274,784.84		Goods	4,359,497.74
„ General Charges „ „ E.	285,807.18		Miscellaneous Receipts	259,284.84
		2,088,434.35	Chinese Government Traffic	152,088.35
„ Balance carried to Net Revenue Account		5,741,153.97		
		7,829,588.32		$ 7,829,588.32

NET REVENUE ACCOUNT

Dr.		*Cr.*	
To Debenture Loan, Interest	456,760.76	By Balance forward from last year ...	6,111,646.42
Chinese Shares, Interest	13,457.15	„ Balance transferred from Revenue Account ...	5,741,153.97
„ S.M.R. Loan, part capital repaid	9,428,57		
„ „ „ , Interest	7,071,41		
„ Paid to Chinese Government	4,497,552.73		
„ Shipping Department	9,600.70		
„ Tongshan College, Upkeep...	37,800.00		
„ Bonus to Employees	197,474.04		
„ Betterments, being amount taken from Revenue for Capital Works	406,045.55		
„ Balance...	6,217,609.48		
	$ 11,852,800.39		$ 11,852,800.39

GENERAL BALANCE SHEET

Dr.	
Capital Account, Balance	Nil
Salaries and Wages due	236,137.17
Sundry Creditors	141,865.53
B. R. A. Balance taken over ...	3,293,107.44
Net Revenue A/c. Balance at Credit	6,217,609.48
	$ 9,888,719.62

Cr.		
Hongkong and Shanghai Bank, London Indemnity Funds...	...£20,000	240,000.00
Revenue Funds, on Deposit Rect	... 35,000	
Revenue Funds, on Current Account " A "...	31,451.15.9	797,421.44
To meet repayment of Loan Capital ...		515,191.94
Cash with foreign Banks in China		
On Deposit Receipt	$1,495,714.29	
On Current Account	757,975.88	2,253,690.17
Cash on hand in Head Office		197,071.54
Stores ...		3,078,156.58
Investments		1,199,289.09
Traffic Accounts due to the Railway		640.266.76
Other Accounts due to the Railway		906,082.49
Accounts due by other Railways ...		61,549.61
		$ 9,888,719.62

WM. HENDERSON, C.A.,
Chief Accountant.

ABSTRACTS.

A. Maintenance of Way, Works and Stations.

Half Year ending 30th June, 1912				Half Year ending 30th June, 1913
	80,862.30	Salaries, Office Expenses and General Superintendence		86,859.42
		MAINTENANCE AND RENEWAL OF PERMANENT WAY :—		
159,257.36		Wages ...	170,190.43	
178,303,48	337,560.84	Materials	200,680.95	370,871.38
		REPAIRS OF BRIDGES.		
9,081.63		Wages ...	4,358.16	
15,067.87	24,149.50	Materials	12,627.32	16,958.48
	53,758.24	REPAIRS OF STATIONS AND BUILDINGS.		59,288.57
	$ 496,330.88			$ 534,004.85

B. and C. Locomotive Power and Rolling Stock Repairs.

Half Year ending 30th June 1912.			Half Year ending 30th June 1913.	
	78,120.70	Salaries, Office Expenses and General Superintendence		87,599.51
		RUNNING EXPENSES		
81,380,15		Wages connected with working Locomotive Engines	86,520.98	
236,092.91		Coal	292,330.90	
23,890.92		Water	29,876.48	
40,571.66	381,935.64	Oil Tallow and other Stores	44,329.07	453,057.43
		MAINTENANCE AND RENEWAL OF LOCOMOTIVES AND MACHINERY:—		
163,380.57		Wages	158,375.53	
63,573.67	226,954.24	Materials	84,409.07	242,784.60
		REPAIRS AND RENEWALS OF CARS:—		
		Coaching Vehicles:		
37,409.41		Wages	42,487.21	
23,193.39	60,602.80	Materials	50,881.52	93,368.73
		Goods Vehicles:		
36,086.79		Wages	36,290.15	
55,657.43	91,744.22	Materials	48,176.53	84,466.68
	21,586.17	Cleaning Carriages and Oiling		26,364.37
	860,943.77			987,641.32
	6,810.49	Steam Ferry at Newchwang		6,196.16
	$ 867,754.26			$ 993,837.48

D. Traffic Expenses.

Half Year ending 30th June, 1912 $	$		Half Year ending 30th June, 1913 $	$
45,459.42		General Superintendence	51,615.84	
129,312.21		Wages of Station Staff	141,485.46	
37,005.06		Wages of Train Staff	39,052.50	
36,571.37		Lighting and Small Stores	38,242.44	
Nil		Wagon Covers, Ropes, etc.	43.17	
3,947.20		Station Fittings and Furniture	4,345.43	
	252,295.26			274,784.84

E. General Charges.

Half Year ending 30th June, 1912 $	$		Half Year ending 30th June, 1913 $	$
132,737.77		General Superintendence	130,240.19	
37,346.25		Accountant's Department	39,683.07	
35,713.58		Stores Department	36,971.63	
19,464.48		Medical Department	24,497.54	
3,958.03		Rents of Buildings and Lands	2,620.15	
47,615.22		Police	50,251.75	
75,191.12		Telegraph Department	83,854.22	
32,332.63		Stationery and Printing	41,983.61	
2,283.76		Compensation	1,506.20	
26,693.13		Sundries	25,851.36	
413,335.97		Interest, &e.	437,459.72	
Cr. 46,075.35			Cr.151,652.54	
$	367,260.62		$	285,807.18

EARNINGS.

Half Year ending 30th June, 1912 $	$		Half Year ending 30th June, 1913 $	$
2,683,778.52		Passengers	3,058,717.39	
3,166,288.06		Goods	4,359,497.74	
58,153.63		Military Traffic	—	
105,220.53		Miscellaneous Receipts	259,284.84	
92,553.22		Chinese Government Traffic	152,088.35	
	6,105,993.96			7,829,588.32

REPORT ON PERMANENT WAY DEPARTMENT

Miles of Main Line Track ... ... 605.760 miles.
Miles of Sidings, permanent 157.533
temporary ... ... 6.492 Total 164.025 ,,

Increase of Main Line ... ... nil.

Increase of Sidings, permanent 6.871
Decrease of Sidings, temporary ... ... 1.820 Net increase 5.051 ,,
New sleepers put in for maintenance.

(a) 8' Sleepers ... ... 129,173.
(b) Crossing sleepers ... ... 900.

Rails changed.

7 Old section 60 lbs. broken or defective.
8 New section 60 lbs. " " "
1 85 lbs. " " "
1 Japanese 60 lbs. " " "

1513 ft. Old section 60 lbs. track replaced by new section 60 lbs.

Fangs of ballast used for maintenance	7,133.
Fangs of ballast used for new work	2,704.
Floor ties renewed	211.

Probable renewals for next year

(a) 8 ft. sleepers	250,000.
(b) Crossing timbers	1,975,
(c) Floor ties	7,200.

New bridges Completed.

Bridge No. 52, 23 spans of 30 ft., timber piles and concrete piers, girders of old 52 bridge used again.

Fangs of rubble used for protective work ... ... 4,266.

Probable extra bridge work, etc., necessary to cope with floods:—

Re-forming and pitching bank between Yang-tsun and Chang-chuang.
Sui-chung-hsien, Extension of No. 188 bridge.
Strengthening Liu Ho dams.

Earthwork executed.

(a) for repairs	26,037	fangs.
(b) for new work	12,398	"

Platforms extended.

Lanchou Loading Stage	35	ft.
Shanhaikuan Up platform	186	"
" Down "	135	"

New buildings erected.

Fengtai Stone's light store	272	sq. ft.
" Train Caterer's quarters	784	"
Tientsin Watchman's house	221	"
" Coal coolies house	300	"
" Tank house	57	"
Tongshan Addition to Works Manager's house	137	"
Shanhaikuan Traffic Inspector's servant quarters	815.10	"
" New lamp room	195	"
" Conductor's quarters extension	292.32	"
" Westinghouse brake shop	285	"
Sui-chung-hsien New pump runners quarters	384	"
Ning-yuan-chou Guard and Brakemen's quarters	149.86	"
Chinchou New axle fitters' shop	120	"
" New lamp room	144	"
" Loco. yard watchmen's house	177.50	"
Kou-pang-tze New telegraph quarters	1,930	"
Ching-tui-tzu New house for station master	360	"
Chu-liu-ho New telegraph quarters	425	"
Huang-ku-tun Locomotive store	453	"
" Office on Transfer platform	679	"
" Platelayers' cabin No. 56 A	551	"
" Caterer's quarters	819	"
, Additional Engineer's quarters	364	"
Total	9,914.78	sq. ft.

Turntables put in. One 55 ft. at Tientsin, the one in use of same size being taken out and put in at Fengtai where the old one required a thorough overhaul.

Heavy works executed.

Yang-tsun to Chang-chuang. All bridges spurs have been rebuilt and neat pitched to stop of 2 or 2½ to 1: about two miles of bank slope re-formed 2½ to 1 and rough pitched and another 1½ miles of low bank re-formed 2 to 1 and neat pitched.

Chang-chuang to Lofa. Four and a half miles of track has been raised so as to have rail level at least 2 ft. above 1912 flood level.

Alterations to station buildings and waiting shed at Chinchou.

Changing 2.42 miles track at Kao-chiao from old section 60 lb. to new section 60 lb.

New landing at Newchwang for ferry boat.

No. 52 Bridge, 23 spans of 30 ft.

Repairs to Liu Ho dams.

Permanent siding of 2.57 miles laid between Huang-ku-tun and Mukden (South Manchuria Railway) Stations.

Foreshore protection.

66 fangs of rubble used at Yingkou.

Wharfage.

Small junk wharf, 100 ft. × 5 ft. built at Chu-liu-ho.

Painting executed for maintenance.

57 Bridges painted.
Chien-men extra tank.
Sui-chung-hsien tank.
Kou-pang-tzu tank.
Tientsin station buildings and signal cabins.
Tongku signals interlocking gear and pointstands.
11 staff quarters at Tientsin and Tongshan.

On Inside Wall District weights on all pointstands have been painted half white and half red to act as point indicators: all lamp cases on station platforms have had the names of stations painted on them.

On Outside Wall District all platform lamps, station benches, whistle posts, signals, staff quarters and station buildings have been painted.

Water supply Works.

Hsu-ko-chuang. A new well 22 ft. deep and 10 ft. diam. has been sunk giving 16 ft. of water. 115 ft. of 4" pipe laid from it to pump.

Tientsin. A small 1850 gall, tank has been erected at East end of station and connected to City mains by 185 ft. of 3" pipe.

Chien-men. An extra tank 10 ft. dia. × 8 ft. has been erected. It was removed from Tungchou River where it was not required.

Sui-chung-hsien Hand pump has been replaced by steam pump and boiler.

Li-chia-wu-pu. A new tank 15 ft. × 15 ft. has been erected.

Works in progress.

Fengtai station building coolies quarters.
Wan-chuang Station building.
Tientsin Central Tsinpu quarters and workshop.
Tientsin East Station building extension.
" " " Metalling roads.
" " " Goods yard road.
" " " Standard Oil Co's Siding.
" " " New sidings east end of station.
Tongshan water supply work.
" New boiler house chimney.
" Extension of pattern shop.
" new shunting siding and alteration to Grid.
Kuyeh new sidings.
Lei-chuang U.S. Military barracks.
Liu-shou-ying Pig stage and siding.
Tongho waiting shed.
Baggage rooms at Tongho, Pei-tai-ho, Changli, Lanchou, and Tongshan.
Shanhaikuan Hospital.
" Bridge works girder shop.
" Shih-ho tank.
Chinchou Loco. Inspector's quarters and Loco. men quarters.
" Boiler house.
Nu-erh-ho New quarters for station master.
Koupangtzu and Yinkou baggage rooms.
Li-chia-wo-pu tank.
Jao-yang-ho Police barracks.
Mukden temporary station baggage room.
Huang-ku-tun Additional room to Traffic Inspector's quarters

Accidents during the six months.

Employees killed	6.	Injured.	7.
Passengers "	4.	"	6.
Trespassers "	24.	"	5.
Animals killed	2.		
Engine and car derailments			11.
Collisions while shunting in station yards			4.
Train separated			1.
Train or cars on fire			6.
Bridge deck			1.
Minor accidents			22.

Rainfall and floods.

No floods during the six months.
General rainfall averaged 8½ inches.

Average Number of Employees, 4,808.

BRIDGE WORKS, SHANHAIKUAN.

The tonnage of work turned out was as follows:—

Girders.

13 spans 30 ft. clear girders	Tons 106. 18. 3. 20.
3 spans 3¾" × 9" × 13' 8" Joist girders	2. 2. 3. 8.
	Tons 109. 1. 3. 0.

Special Work, tank, etc.

1 7' 6" diam. × 7' 10" Water tank	1. 12. 0. 10.
11 sets Smoke jacks	6. 1. 0. 20.
4 12" × 36' 0" × ⅛" steel plate chimneys for Koupangtzu workshop	1. 7. 0. 0.
	Tons 10. 0. 1. 2.

Miscellaneous iron work.

To the extent of	Tons 34. 5. 0. 0
Total Tonnage of ironwork done	Tons 153. 7. 0. 2.

Points, Crossings, etc.

During the six months 84 complete sets of Points and Crossings were manufactured and delivered, and 202 sets double and single armed signal posts, fittings, ladders and tripods constructed.

Foundry.

The Foundry has been fully employed upon castings, signal gear, washout pumps, water cranes, railway chairs signal frames and miscellaneous castings for maintenance and construction.

Iron castings to the extent of	Tons 95. 18. 2. 26.
Brass castings „ „ „	1. 8. 1. 20.
Total	Tons 97. 7. 0. 18.

Average Number of Employees.

The average daily labour employed including Sundays, Holidays and staff amounts to 357.

ROLLING STOCK EQUIPMENT AT 30TH JUNE, 1913.

	No. of Vehicles	Tonnage	Axles.
10 Ton 4 wheel explosive	6	60	12
Coal car	271	2710	542
Water Tank	7	70	14
Pig Cars	7	70	14
12 Ton Coal cars	469	5628	938
15 Ton Low side	5	75	20
20 Ton „ „	258	5160	1032
Flat	74	1480	296
H. S.	817	16340	3268
12 Ton Pony	38	456	152
20 Ton Covered Goods	97	1940	428
24 Ton H. S.	156	3744	624
L. S.	16	384	64
Flat	1	24	4
30 Ton Covered Goods	165	4950	660
Water tanks	3	90	12
Oil „	49	1470	196
Low side	38	1140	152
H. S.	462	13860	1848
Logging	2	60	8
Total Cars	2941	59711	10284

	No. of Vehicles	Axles.
Imperial cars	3	12
State cars	3	12
Directors' car	1	4
Family and private	13	40
1st class	27	108
2nd „	37	148
3rd „	103	412
Composite	17	68
Buffet cars	7	28
Postal vans	4	16
Train de Luxe Equipment.		
1st class Dining cars	3	12
2nd „ „ „	2	8
1st „ sleeping „	5	20
2nd „ „ „	3	12
1st „ saloon „	2	8
2nd „ „ „	2	8
Heating and Lighting cars	4	16
Baggage and Brake Van	5	20
Kitchen	1	4
Brake Vans.		
4 Wheel	49	98
8 Wheel	15	60
	306	1114

LOCOMOTIVES

Passenger.	4—4—0	Cylinder 17" × 24"	4	
	4—4—0	„ 19" × 24"	3	
	4—6—0	„ 18" × 24"	13	20
Freight.	2—6—0	„ 17" × 24"	43	
	2—6—0	„ 19" × 24"	15	
	2—6—0	„ 16" × 24"	27	85
Shunters.	2—6—2	„ 14" × 24"	13	
	0—6—0	„ 16" × 24"	4	
	2—6—4	„ 17" × 24"	2	19
			Total	124

TENDERS

4 Wheel	3
8 Wheel	83
6 Wheel	26
Total	112

COMPARATIVE TABLE OF ROLLING STOCK

	1912	1913
Passenger Coaches and Brake Vans	302	306
No. of axles	1098	1114
Freight cars of all classes	2974	2941
Tonnage capacity	60555	59711
Locomotives of all classes	123	124
Weight in tons	5598	5649

NEW MACHINERY ERECTED

1 Herberts Filing Machine.
1 Blind Style Mortising Machine.
1 Combined Mortising and Boring Machine.
1 Screwing Machine for water space stays.

Electrical.

The Staff and Police quarters Tongshan had electric light installed. A combined set from the old Imperial train was erected at F.T. to light Loco. and station yard. A 26 K. set was put down in Tientsin shed to charge coach accumulators and light the shed and stores yard. A 15 K. set put into S.H.K. shed to light shed, loco. and station yard. Mukden loco. and car shed and station yard is being wired and equipped for lighting. Current for which will be obtained from the Japanese Power plant.

REMARKS

Locomotives.

The six 19" mogul engines whose construction was sanctioned in 1912 are well advanced, one of which has undergone trials under steam. Works has also commenced on the three shunting engines. Unusual delay was experienced in obtaining material due to strikes in England.

The mileage during March constituted a record for one month (374,270 miles). A want of power was experienced.

Reboilering of 15, 58 and 74 class continued.

Coaches.

Six 3rd class fitted with electric light, Westinghouse system of steam heating and comfortable battend seats, as usual in the first class only a few years ago, and a Second class fitted in a similar style, seats being cushioned went into service on the express between T. S. & P. K. All third class passing through Tongshan Works for repair were equipped with seats round sides and large baggage racks.

Stones system of lighting was fitted to three coaches only one of which however has gone into service as yet.

Freight stock.

New work has all been for foreign lines. The hundred and twenty Kalgan cars are being fitted with the Westinghouse automatic and non-automatic brake in a combined set.

TRAFFIC DEPARTMENT

Train miles run for Revenue...	1,331,314
Train miles run for Construction and Maintenance	26,597
Number of Passengers carried	1,908,032
Number of Tons of Freight carried	1,998,497
Passenger Mileage	152,515,943
Ton Mileage	216,013,194
Total "Passenger Ton" Mileage	368,529,137
Average number of men employed under Traffic Manager including Police Force about 1132	2,985

AMERICAN TRADE IN CHINA

AN ANALYSIS OF THE SITUATION

The American Minister at Peking, Dr. Paul S. Reinsch, has prepared the following important study on American Handicaps in reaching Chinese Trade:—

In connection with the efforts made by such organizations as the Chamber of Commerce of the United States of America, the American Manufacturers' Association, the Pan American Society and the American Exporters' Convention, which latter was addressed by the President of the United States on May 29, the following considerations upon the organization of American trade and investment abroad, particularly in China, are submitted:

The greatest deficiencies which prevent the development of American commerce and enterprise in China are the absence of financial institutions for handling foreign loans; the lack of an investment company which could subject proposed improvements to scrutiny and gather up the means for promoting sound enterprises; the lack of American commission houses; the lack of an organization of exporters with representation in important foreign markets, like China; and finally the lack of commercial attachés, who could assist the diplomatic missions and consular offices in co-ordinating and rendering more efficient the work now performed by these agencies.

HOW THE BANKING QUESTION MIGHT BE SOLVED

As individual banks in the United States, or for that matter in almost every country, are not so organized that they could readily engage in foreign business, and, as the scope of foreign business, especially to countries where new markets have to be gained, is such that it transcends the means of individual banks and their opportunities for placing investments, it becomes necessary that there should be formed a financial institution or institutions broadly representative of American financial activities which could undertake the development of American financial and industrial interests abroad. In the announcement of the withdrawal of the United States from the Six-power Group in China, the President declared:

> The Government of the United States is earnestly desirous of promoting the most extended and intimate trade relationship between this country and the Chinese Republic. The present administration will urge and support the legislative measures necessary to give American merchants, manufacturers, contractors, and engineers the banking and other financial facilities which they now lack and without which they are at a serious disadvantage as compared with their industrial and commercial rivals. This is its duty. This is the main material interest of its citizens in the development of China. Our interests are those of the "open door"—a door of friendship and mutual advantage.

In order that the American Government may give such support to financial institutions coming abroad as is given by other governments, it is desirable that these institutions should have the broadest possible—in fact, a quasipublic—character, and that they should be broadly representative of the financial energies of the Nation. If banking institutions for foreign commerce could take a form similar to that of the Federal reserve banks, created by the currency law, their representative character would be assured. At any rate, it is desirable that, for purposes of foreign trade, it should be made legal for financial institutions in the United States to unite in the creation of a banking institution which could perform for the country this service connected with foreign investment, which, under modern conditions, is necessary in order to prepare the way for the enlargement of our foreign commerce.

INVESTMENTS OF CAPITAL

As the United States is entering a stage of development in which it not only will need a much larger foreign commerce, but in which there will also be available larger amounts of capital for investment abroad, it is highly important that responsible investment companies should be created in order to avoid loss and waste and to secure the greatest returns from this expenditure of national wealth. Even in the past there have been great amounts of money available for foreign investment; millions of dollars were gathered together to be spent in such enterprises as Mexican rubber plantations, which were in many cases unsound. This shows that the American public is not adverse to foreign investment. It also shows that they are easily misled into enterprises of doubtful solidity to the great embarrassment of people who frequently can not afford the losses. It is therefore of the highest importance, from every point of view, that responsible companies for foreign enterprises should be created. It would be their business to investigate the many opportunities which are now open to foreign enterprise in such countries as China, to select the most sound and practical investments, and to conduct the available capital into the proper channels. This activity would have a highly stimulating effect on American foreign commerce. Commerce no longer develops alone, but is so closely bound up with investment that the two must be constantly associated. Under modern conditions, commerce follows investment.

AMERICAN COMMISSION HOUSES IN CHINA

The advances which have hitherto been made by American commerce are due mostly to so great an inherent excellency of the products that a demand was created abroad in spite of all absence of export organizations; but American commerce can not continue to rely on foreign commission houses, which will always give it only a secondary position. The creation of more American commission houses in China is essential if there is to be any advance of American commerce here; only by creating its own organs of distribution can our manufacturing industry hold its own in a market like China.

A COMBINATION SALES ASSOCIATION

Organizations of export interests have been created by many of the other nations, especially Great Britain and Germany, and they have been successful in extending their commerce through the consequent co-operation among exporters. Such is, for instance, the Representation for British Manufacturers (Ltd.), a company composed of such important manufacturing firms as Cravens (Ltd.), Dorman, Long & Co. (Ltd.), Thos. Firth & Sons (Ltd.), Sir William Arrol & Co. (Ltd.), etc.

This company is not a trading concern; its sole object is to establish and maintain staff representatives in certain foreign countries for the sale of manufactures. It thus combines the features of an agency or propaganda and of a selling organization. The Export Verbund of Germany is also making an organized effort of trade propaganda.

It would seem very desirable that some such organization as those mentioned in the first part of this dispatch should organize in an important country like China an agency of representation for discovering and investigating trade opportunities and guiding manufacturers at home in their competition with foreign enterprise.

VALUE OF COMMERCIAL ATTACHES

Great efforts are being made to have the development of American commerce effectively assisted through the action of diplomatic and consular representatives; but an organization has not as yet been effected through which the work of these agencies could be co-ordinated so as to be brought to bear most effectively on specific problems. It is, from every point of view, essential to the advancement of American commerce that the embassies and legations in countries which are important to our commerce should be provided with commercial attachés. The assistance which such officials could give in unifying the efforts of the consular representatives, and in making them valuable for the best guidance of our commerce and manufacturers interested in foreign commerce, would add greatly to the efficiency of the whole service.

FAR EASTERN RAILWAYS

CHINA

Canton-Hankow Line.—A consular report, reviewing progress in 1913, says:—A further section of the Canton-Hankow line was opened to traffic on August 1 as far as Sha Hou, 109 miles from the Canton terminus. The next section, of which 20 miles are practically completed, and will shortly be opened to traffic, is estimated to cost $2,000,000, and will take the line to Hsiukuan (Shao Chou). It is not proposed to continue beyond this point until the Hunan section is more advanced towards completion, as the country is sparsely inhabited between Hsiukuan and the Hunan border. Since the opening of the line to Ying Tak receipts are said to have almost doubled themselves, and there is no doubt that they could be still further increased at the present time but for the shortage of freight cars. As mentioned above, traffic on the North River has been practically at a standstill, and junks have often taken more than a fortnight to cover the distance between Hsiukuan and Canton. The result has been a heavier goods traffic than the railway can cope with. A third call of $2.50 a share was made during the latter half of the year, but the company found great difficulty in collecting the money until they threatened to confiscate shares on which calls had not been fully paid up. Since then about 60 per cent. has come in, and hopes are entertained of collecting the remainder. Lack of capital is given as the reason for not commencing the loop line to link up the Canton-Hankow and Canton-Kowloon railways. This line would undoubtedly benefit both railways, and it seems a shortsighted policy to delay its construction, which is estimated to cost $350,000 to $400,000.

Work has not been commenced on the Canton-Macao line, the delay in this case being also ascribed to lack of capital.

Shanghai-Nanking Railway.—The following figures of traffic returns (approximately) for the week ended August 29, are issued by the Shanghai-Nanking Railway:—

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	47,712	8,461	56.173
1913....	29,008	6,424	35,432
Increase.	18,704	2,037	20,741
Decrease	—	—	—

For nine weeks.

Year.	Passengers.	Goods & Sundries	Total
	$	$	$
1914....	374,729	99,631	474,360
1913....	296,808	65,769	362,572
Increase.	77,926	33,862	111,788
Decrease	—	—	—

Week ended September 5.

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	47,762	8,642	56,404
1913....	32,954	6,937	39,891
Increase.	14,808	1,705	16,513
Decrease	—	—	—

For 10 weeks.

Year.	Passengers.	Goods & Sundries.	Total.
	$	$	$
1914	422,491	108,273	530,764
1913	329,757	72,706	402,463
Increase.	92,734	35,567	128,301
Decrease	—	—	—

Week ended September 12.

Year.	Passengers.	Goods & Sundries	Total for the week.
	$	$	$
1914	42,203	7,289	49,492
1913	58,322	6,764	65,026
Increase.	—	525	—
Decrease	16,119	—	15,534

For 11 weeks.

Year.	Passengers.	Goods & Sundries	Total
	$	$	$
1914....	464,694	115,562	580,256
1913....	388,079	79,410	467,489
Increase.	76,615	36,152	112,767
Decrease	—	—	—

THE PHILIPPINES

Manila Railway Co.—The seventh ordinary annual general meeting of shareholders in the Manila Railway Company (1906), Ltd., was held at Winchester House, Old Broad-street, London, on July 30, Mr. C. J. Cater Scott (chairman of the company) presiding. The Secretary (Mr. J. Mackenzie) read the notice convening the meeting and also the report of the auditors.

The Chairman, in moving the adoption of the report, said that he must admit at once that the results, as stated in the report presented that day, were not so satisfactory as those who had followed the fortunes of the Manila Railway might have expected. So far as the gross earnings were concerned, there was really nothing to complain of, but when they came to the net result it would be found that, first of all, there had been a general increase in working expenditure—which he took to be the experience of nearly every other company throughout the world—thus showing a reduction in net earnings. Then, again, they had to bear a certain amount of increased burden representing interest on capital employed on the Southern lines, lines which had to a certain extent been completed and bonded, but these lines were in a more or less incompleted state. The third item to which he had to refer was the large amount of income tax. Those three items had very largely reduced the accounts of the English Manila Railway Company in the way of net receipts. It was only fair to add that every railway company carrying out a very large scheme of construction necessarily involved the locking-up from time to time of a large amount of capital, and, while the expenditure of this capital was not fully remunerative, it had earned its full interest charges, and the directors were able to pay a small dividend on the preference shares, and, at the same time, increase the amount of the carry forward. Under these circumstances he thought they must all admit that the railway had not done badly. With regard to working expenses on the Northern line, taking the years 1904 to 1911, inclusive, it would be found there had not been a great deal of variation in the working expense ratio, which had been about 43 per cent. to about 44 per cent., except in the year 1908, when they were 45.64 per cent.; but in 1912 there was a considerable increase, for in that year it reached 46.37 per cent., and in 1913 they were 47.28 per cent., which was an increase of nearly 1 per cent. over the expenses of the previous year. As to the Southern lines, in the last three years there had been very steady and large increases in the working expenses, as well as in the receipts, which he confessed he was not altogether prepared for, but there were certain matters to which he would refer, showing how this expenditure had arisen. First of all, the Northern lines were 20 years old, and in 10 years their goods traffic had grown from 146,000 to 695,000 tons. That was on the Northern lines alone, and their passenger traffic had grown from 1,335,000 to 6,335,000. In order to deal efficiently with these goods and passenger traffic it had been necessary to strengthen their bridges and other works in order to carry the heavier locomotives which were required. Then there was another matter on the Southern lines which had led to the increase in the working expenses. The mileage on those lines was developing very rapidly. Perhaps the shareholders hardly realised what this development meant. For instance, in 1910 they had 70 miles in operation, in 1911 103 miles, in 1912 154 miles, in 1913 174 miles, and by the end of this year they expected to have 254 miles, so that in the five years they would have risen from 70 miles to 254 miles of track in operation. When they had more miles to operate it necessarily required an increased staff. Then there was another difficulty they had to contend with. They were the only railway in the island of Luzon, and from the day when they turned the first turf of the line, some 20 years ago, they had had to train practically every member of the staff out of the raw material which was at their disposal. There was really no reserve of skilled labour in the island. They had, therefore, to educate everybody, and he considered that it was greatly to the credit of Mr. Higgins that he had been able to surround himself with such an excellent staff produced from such raw material.

The policy of the board was not to run "Flying Dutchmen," or anything of that sort, but to maintain the road in good working order, and to conduct the business efficiently. The company really required something useful in the way of a railway, and desired that it should be kept in good working order. (Hear, hear.) It would be noticed from the report of the American company that a sugar mill was being erected at Calamba, and that there were other smaller sugar mills to be erected elsewhere, and all that could be said was that they wished them every possible success, as it would undoubtedly lead to the improvement of the traffic of the railway. A short branch of four or five miles would have to be constructed to these mills, which would be capable of producing something like 20,000 tons of sugar, and, if the cane was there, and given good seasons, there was no doubt it would be, and there was no doubt those mills would be prosperous. Then, again, he ought to add that as they pressed forward to the southern portion of the island they would be able to tap the districts which produced hemp and copra, and he believed that when they got into those districts they would secure a valuable traffic in both those commodities. The task of construction during the last few years had been somewhat heavy and anxious. In 1908 they had 208 miles in operation, in 1913 479 miles, being an increase of 271 miles, and by the end of the present year they expected to have 559 miles in operation, and in the middle of 1916 610 miles, leaving, after, that date, only 110 miles to finish the programme of construction.

When they were building all this mileage, of course, it had to be paid for, and the only way it had been paid for was by issuing bonds from time to time. It had not been a favourable time for issuing these bonds, and they either had to issue them at a higher rate of interest or accept a lower price for them. In any case the company in such circumstances, would be, and were, heavily hit. The directors in 1910 foresaw this trouble, though he was sorry to say not to its fullest extent. At that time, the Northern section was practically completed, and the first charge of the "A's" and "B's" earned last year £208,000, as against interest amounting to only £155,200. The Southern section was financed by 4 per cent. guaranteed bonds, which were guaranteed by the Philippine Government under

an Act passed by Congress at Washington, and when the company agreed to build the line on those guaranteed bonds they did not anticipate that there would be any difficulty in selling them, but in this respect they had been disappointed, owing to the fall in prices. These bonds had failed to realise the cost of construction, and the deficiency would have to be made good out of the proceeds from the "A" and "B" bonds, which was a second charge on the Southern section. Therefore, the board proposed to modify their scheme, and to do that the assent of the authorities would have to be asked. The Chairman then proceeded by means of the map to explain the proposed modification. Next, he proceeded to deal with the accounts of the English company, and explained that they had received the full amount of interest on bonds held in the American company. There was a balance available for dividend of £123,040, and the board recommended a dividend at the rate of 1 per cent. on the preference stock, and to carry forward £103,940 to the next account. He concluded by moving the adoption of the report and accounts.

Mr. R. G. Phillpotts seconded the motion.

In reply to questions the Chairman said that the modified programme of construction should be completed about the spring of 1916, leaving the remaining 110 miles to be finished at a later time. A certain amount of money had already been spent in the South, and they thought it worth while to complete the construction of the line there in order to secure the guaranteed bonds. Moreover, they believed that the line, even though separated from the rest of the system, would fully pay for itself. With reference to the provision of funds, they had a certain amount in hand in the way of stocks, but they would have to make an issue of bonds for construction purposes. The Chairman did not think it was desirable to distribute among the shareholders any of the balance of £103,000. In the difficult times through which they were passing it was much wiser to retain it. He was now discussing a scheme for the allocation of a certain portion of that balance to open a proper renewal fund, which would be a very useful thing. The resolution was then put to the meeting and unanimously adopted.

On the motion of the Chairman, seconded by Admiral Sir Cyprian A. G. Bridge, G.C.B., a dividend of 1 per cent. on the preference stock for the year payable on July 31 was declared.

The retiring directors, Mr. R. B. Phillpotts and Mr. E. J. W. Byrne, and the auditors, Messrs. Deloitte Plender Griffiths and Co., were re-elected, and a vote of thanks to the chairman and directors and to the staff at home and in the Philippines concluded the proceedings.

MANCHURIA

South Manchuria Railway.—The returns for the month of August yielded the daily average of Y38,074, being a decrease by Y3,379 from the corresponding month of last year.

FINANCIAL

Hongkong and Shanghai Banking Corporation.—The ordinary half-yearly meeting, followed by an extraordinary meeting of shareholders, was held at Hongkong at noon on August 22. The Hon. Mr. D. Landale (Chairman of Directors) presided.

The Chairman said:—I think you will agree that the accounts disclose a satisfactory state of affairs. We propose, subject to your approval, to make the following distributions of the profits:—

Dividend £2 3/- per share subject to income tax.

$350,000 added to silver reserve.

$400,000 written off Bank premises account.

After providing for this, there remains a profit of $2,089,008.44 to be carried forward, being about $20,000 more than the amount brought in from the last account. (Applause.) With regard to the dividend, your directors decided that it was desirable to follow what has now become the prevailing practice, and to declare the dividend subject to the deduction of income tax instead of free of income tax as formerly. After careful consideration, we are recommending an increased dividend, and in making this change we considered it desirable to increase the dividend by an amount approximately equivalent to the income tax levied at present and, should circumstances permit, to do the same at the end of the current year. I trust, gentlemen, that this procedure will meet with your approval and that you will also approve of the other appropriations which we recommend. (Applause.) Three weeks ago I hoped to address you with regard to the balance sheet, and to the prospects of business in China generally in an optimistic frame of mind.

The figures of the balance sheet show a healthy expansion in every direction, and the total of our assets and liabilities is the highest recorded in the history of the Bank. (Applause.) Our gold securities, taken at the market values ruling at the end of the half-year, showed a very handsome surplus over the values at which they are standing in our books. The outlook for China was full of promise, the Central Government steadily introducing order and authority throughout the provinces, the Maritime Customs revenue collections for the present year being the highest on record, and the collections of the salt inspectorate under the able direction of Sir Richard Dane exceeding the most sanguine expectations. Everything pointed to prosperous times ahead, but the tremendous events now happening in Europe have upset commerce all over the world.

It is useless at this juncture to speculate as to how the nations will emerge from this terrific struggle, and what the effect of it will be on the conditions in China and the other countries in whose trade we are interested; but one certain result will be widespread disorganisation and distress. With our far-reaching interests we can hardly hope to escape without some loss. Thanks, however, to the policy of strengthening the reserves which has been steadily pursued for many years by the directors, with the consent and approval of the shareholders, the Bank is in a very commanding position, and able to face with equanimity any situation which may reasonably be anticipated as the result of the appalling war now going on. (Applause.) It will be seen from the balance sheet that the cash position of the Bank at the end of the half-year was unusually strong. We have accordingly been able to meet freely any unusual demands which our constituents have been obliged to make on us as a result of the dislocation of business, and it will be the policy of the Bank to assist the public by continuing to give facilities on the ordinary terms with the object of minimising the disturbance to trade as far as possible. (Applause.) Here, as in other Eastern ports, there has been some excitement among Chinese caused by absurd rumours spread by interested parties, and many poor people have fled from the Colony. It cannot be too strongly impressed on the Chinese generally that their persons and property are perfectly safe here, and that apart from the interruption to overseas trade, business will proceed as usual. Let us hope that the more influential members of the Chinese community will use every exertion to bring an end to this condition of unrest and uneasiness. (Applause.) Mr. Stabb, our Chief Manager, left last May on a hard-earned holiday, but immediately upon the European position becoming critical he at once offered to curtail his leave and will probably return some months earlier than was originally intended in order that the chief officers of the Bank may all be at their posts to cope with any difficulties that may arise under the exceptional circumstances which now exist. It has no doubt been of assistance to the London management to have Mr. Stabb in London during the past few weeks. I would like to take this opportunity of saying, gentlemen, that your directors have every confidence in Mr. Stephen, your Acting Chief Manager, and you may rest assured that every care is being taken to safeguard the interests of the Bank. (Applause.) As mentioned in the report, your directors have had to regret the death of their colleague, Mr. Friesland, who joined the board in 1908, and who took a keen interest in the affairs of the Bank. We had in him a zealous and loyal colleague and we deplore his untimely death. The provisional Committee which met in August, 1864, to discuss and arrange the formation of the Bank contained a German member, and since then the board of directors has never been without one or more German representatives. For reasons which will be apparent to you, and which I need not enlarge on, our German colleagues have resigned their seats. The directors wish to record their personal regrets at the withdrawal of those gentlemen, with whom they have always worked in perfect harmony. Before moving the adoption of the report and accounts as presented, I shall be pleased to answer any questions you may put to the chair.

There were no questions, whereupon,

The Chairman proposed the adoption of the Report and Statement of Accounts, as presented.

Hon. Mr. H. E. Pollock seconded, and said—I have great pleasure in seconding the adoption of the Report and Statement of Accounts, which are of a most satisfactory character. During the past few weeks trade conditions have been seriously disturbed by the war, but it is my firm belief that we shall shortly witness a marked improvement in these conditions in this part of the world, and that the strong financial position of this Bank, with its large reserve funds, enables the shareholders to look forward to the future with calmness and confidence. (Applause.)

The motion was then put to the meeting and carried unanimously.

The appointment of Mr. G. T. M. Edkins as Director was confirmed.

At an extraordinary meeting held later the Directors were authorized to seek sanction from the Government for the amendment of the Ordinance which governs the constitution of the Corporation, and to ask that the Corporation should be empowered generally to take security without restriction from its constituents by way of mortgage of leasehold lands in Hongkong, or of lands in other places, as security for general banking facilities, and also to hold meetings once a year instead of twice annually.

Yokohama Specie Bank.—The following is the gist of the speech delivered by Mr. J. Inouye, president of the Yokohama Specie Bank at the general meeting of its shareholders on September 10: Gentlemen, in submitting to you, shareholders of the Yokohama Specie Bank, a general report on the business transacted during the first half-year at this sixty-ninth general meeting of the bank, I have the honor to make a general statement on the economic status at home and abroad as well as on the existing condition of our bank business.

The general condition prevailing in our economic world during the first six months of this year is as follows. In consequence of a fall in the price of rice the purchasing power of the farmers had decreased; which in turn deterred enterprises, dispirited the stock market, and depressed commerce. Goods accumulated in warehouses and the cry of "hard times" was heard both in town and country. As a result of this, however, foreign imports had remarkably decreased, and exports showed signs of increasing. And this made us hope the time had arrived in which we could realize our long-cherished but long-unfulfilled desire of equalizing our exports and imports. Thus we were led to believe the present adverse state of affairs would be a cause for future prosperity in store for us, so that we

need entertain no pessimistic theory as to the present state.

The condition of the money market during the six months under review is as follows. Owing to the temporary ease prevailing during the previous term added to the general depression in the economic world referred to, the demand for funds had much diminished. Besides the flotation of short-term foreign bills to the amount of yen 25,000,000 and the reimbursement of Exchequer bonds made the monetary market somewhat slack; in consequence of which the interest-rates were lowered. But we also experienced the suspension of payment by several small banks in various places, and in Osaka a certain influential bank was placed in a state needing financial assistance. Consequently some uneasiness was experienced in monetary circles in touch with those banks. Though no serious effects had ensued, there was much precaution, so that many a bank had to suffer between deposits of high interest and scarcity of applications for loans. Thus in April or thereabouts when there was much demand of funds for the importation of raw-cotton and for the purchase of summer-goods, money had gradually become tight and the interest showed an upward tendency. But this was a sectional phenomenon, while upon the whole the money-market had kept up a state of slackness and the critical time of making half-yearly accounts was passed in peace.

As regards our foreign trade it had been in an increasingly favorable state. The exports effected during the term under review represent 312 million yen, against imports of 382 million yen showing an excess of 70 million of imports over exports. But when contrasted to the excess of imports during the corresponding time last year the figures show a decrease of 50 million cen. In imports the figures this year show a d crease of 22 million yen and in exports an increase of 27 million yen. The decrease of imports was doubtless due in great measure to such causes as curtailment of governmental enterprises and general depression at home; while the increase of exports was caused largely by the development effected in our productive enterprises. But the main cause of this satisfactory tradal condition was that the marked development in our spinning industry had increased our exports of cotton yarn and cotton cloth to China, and that there was a great fashion abroad for silks which had maintained high quotations.

As regards the foreign exchanges handled by this bank they also showed a corresponding increase in respect to the exports and a corresponding decrease in respect to imports.

As regards the economic conditions in European countries the expectation generally entertained that the end of the Balkan embroglio last autumn would cure the debilitated commerce and industry, was not realized. There was no expected recovery even this year. The demand for funds continued to be small, and the monetary markets everywhere were slack. Consequently the Bank of England lowered its interest from 5 per cent. to 4½ per cent. on January 8. During the same month the bank decreased the interest twice, and cut it down to 3 per cent. The German and French national banks and others promptly followed the example of England, with the consequence that the discount rate had fallen in a corresponding degree. And yet the industry and commerce of the various countries had continued to be in an inactive state up till the close of the term under review.

In the United States though tariff and currency reforms had been effected, the people had not quite accustomed themselves to the new order of economic affairs brought about by the U. S. Government. Besides as the law pertaining to control of 'trusts' had not been codified, many an enterprise was postponed. Consequently commerce was not brisk, and there was little demand for funds. But owing to the sudden outbreak of Mexican troubles in April money became somewhat tight the stock-market in particular being much affected. But as the Mexican situation had been before long peacefully settled, the monetary market had again relapsed into the former inactivity. Owing to this abundance of money the payment of American gold to Paris to the amount of 82 million dollars had left no ill effect upon the U. S. money market. Thus did the term under review close for the United States.

As regards conditions in the Orient, India had not quite recovered from the effects of the panic of last autumn, but owing to the brisk demand for raw cotton, the monetary circulation among the natives was in a satisfactory state. In regard to imports, however, the effects of last year's panic were still tangible. The sale of Manchester goods was not good.

In China the bad crops experienced in Tientsin last year affected the exports during the term under review. The exportation of 50,000 bales of raw cotton which was effected during the previous term was cut down to 10,000 during the term under review. The imports were also unsatisfactory. The Chinese banks were mostly hard up for funds, and owing to the general decline of credit on the part of Chinese merchants, commerce was exceedingly dull. The after-effects of the Hankow disturbances were not wholly removed.

Owing to the fall in bank-rates both at home and abroad, and to the general tradal depression I have briefly described, we have experienced a certain amount of inconvenience in the business at our bank. But thanks to the satisfactory condition of our export business, which occasioned proportionate increase of the foreign exchanges handled by the bank we are enabled to report better results for the term under review than those for the previous term. The net profit for the half-year review is yen 3,465,406.24 including the amount brought forward from last term i.e. yen 1,267,488.68.

In conclusion I have to report to you that our branch office at Chientao established in November last has unavoidably been closed for the time being owing to the present situation.

SHIPBUILDING, ETC.

Shanghai Dock and Engineering Co., Ltd.—On September 7 the U. S. Collier No. 1, was successfully launched from the Pootung shipyard of the Shanghai Dock and Engineering Co., Ltd., the christening ceremony being performed by Miss Cole. Mr. John Prentice, Chairman of the Board of Directors of the Dock Company, mentioned that the collier was the largest vessel ever built in Shanghai, and her launching weight alone was 2,300 tons. The Company had already built for the U. S. Government over thirty boats.

The collier is intended for service in Manila, and measures 362 ft. in length, with a moulded breadth of 50 ft. and moulded depth of 28 ft. She has a coal cargo capacity of 6,000 tons, and is fitted with special machinery for handling same. The coaling machinery, which is of the Holland-Johnson design, consists of four elevators, each complete with separate steam engine, coal shoots and automatic weighing machine, and each is capable of bunkering about 150 tons of coal per hour. There is also one independent coal conveyor, arranged with swivel discharge shoot and buckets driven by steam engine, so that coal can be delivered on the decks of steamers lying at a height of 50 ft. above the 20 ft. loadline of the collier.

The ship is fitted with two electric generating sets, driven by steam turbines, each capable of fully lighting the vessel; four powerful steam capstans for the handling of vessels coming alongside; powerful steam windlass steering gear; independent steam-driven air and circulating pumps; two independent Weir's vertical steam feed pumps; independent bilge and ballast pumps; and powerful fire pump. The propelling machinery consists of one set of compound surface condensing engines, with steam generating in a large cylindrical multitubular boiler.

Accommodation for the captain, officers and engineers is arranged aft, under the poop deck, with the usual galley and store rooms, and suitable accommodation for the crew is fitted forward, under the upper deck.

After being launched, the collier was towed to the New Dock to have her boiler installed.

TRAMWAYS

Shanghai Tramways.—The following is the traffic return of the Shanghai Tramways (Foreign Settlement) for the month of August, 1914, and for eight months ended August 31, 1914, with figures for the corresponding periods last year:—

	August, 1914. $	August, 1913. $
Gross receipts	113,581.47	107,910.07
Loss by currency depreciation	28,004.16	24,686.08
Effective receipts . . .	85,577.31	83,223.99
Percentage of loss by currency depreciation .	26.24	23.99
Car miles run	312,400	262,613
Passengers carried . . .	5,041,451	4,404,056

	eight months ended Aug. 31, 1914. $	eight months ended Aug. 31, 1913. $
Gross receipts. . . .	863,583.28	759,049.83
Loss by currency depreciation	203,284.12	165,734.97
Effective receipts . .	660,299.16	593,314.86
Percentage of loss by currency depreciation .	24.96	23.09
Car miles run . . .	2,228,201	1,881,732
Passengers carried .	36,523,676	30,301,293

Week ended September 2.

	1914. $	1913. $
Gross receipts	25,115.23	24,952.93
Loss by currency depreciation.	6,193.95	5,697.03
Effective receipts . . .	18,921.28	19,255.90
Percentage of loss by currency depreciation . .	26.35	23.93
Passengers carried. . .	1,125,368	1,029,264
Car miles run	66,479	58.731

Week ended September 9.

	1914. $	1913. $
Gross receipts	24,979.92	23,973.87
Loss by currency depreciation.	6,231.60	5,465,33
Effective receipts . . .	18,748.32	18,508.54
Percentage of loss by currency depreciation . .	26.65	23.99
Passengers carried. . .	1,122,443	993,423
Car miles run	63,548	56,251

Week ended September 16.

	1914. $	1913. $
Gross receipts	23,390.86	24,886.50
Loss by currency depreciation	5,805.45	5,630.73
Effective receipts . . .	17,585.41	19,255 77
Percentage of loss by currency depreciation . .	26.67	23.78
Passengers carried. . .	1,040,943	1,043,245
Car miles run	59,071	56,833

COMPANIES

Hokkaido Gas Co.—The Hokkaido Gas Company has adopted the following profit and loss account:—

	Yen.
Net gains for the term	51,235.29
Brought over from last account ..	2,359.85
Total	53,595.14

To be distributed:—	
Legal reserve	2,565.00
Secondary reserve	3,600.00
Bonuses and social expenses	3,000.00
Dividend at 7 per cent. per annum..	42,000.00
Carried forward to next account ..	2,430.14

Oji Paper Mill Co.—The profit and loss account for the last half year was as follows:

	Yen.
Net profit for the term	433,337 31
Brought over from last account ...	101,722.53
Total	535,059.84
To be distributed:	
Legal reserve	22,000.00
Fund against accidents to the plant	64,210.55
Dividend at 9 per cent. per annum	270,000.00
Pension reserve...	15,000.00
Carried forward to next account...	125,849.29

A proposal for the augmentation of the company's capital to 12,000,000 yen from 6,000,000 yen was referred to the meeting and the proposal was passed with unanimous vote. New shares representing the increased capital were to be issued to the original shareholders at the rate of one to every old share toward the end of August, the first instalment on them to be called September 21.

Taihoku Sugar Mill Co.—At the ordinary general meeting of shareholders the following profit and loss account was passed:—

	Yen.
Net profit for the half year	153,988.95
Legal reserve	9,000.00
Fund for the depreciation in the fixtures	8,500.00
Dividend at 8 per cent. per annum	120,000.00
Fees for officers...	10,000.00
Pension reserve	1,200.00
Carried forward to next account ...	5,288.95

Tainan Sugar Mill Co.—At the ordinary general meeting of shareholders the following profit and loss account was passed:—

	Yen.
Net gains for the half year	122,525.11
Legal reserve	3,000.00
Sinking funds for fixed capital ...	5,000.00
Pension and other funds	60,000.00
Dividend at 4 per cent. per annum	40,800.00
Fees for officers...	3,000.00
Carried forward to next account...	8,725.11

Taiwan Sugar Mill Co.—At the ordinary general meeting of shareholders the following profit and loss account was passed:—

	Yen.
Gross receipts for the term	2,300,815.60
Sinking fund for fixed capital ...	150,000.00
Balance (net gains for the term)...	2,150,815.60
Brought over from last account ...	56,707.22
Transferred from dividend equalization fund	190,000.00
Total	2,397,522,83
To be distributed:—	
Legal reserve	108,000.00
Bonuses and social expenses... ...	120,000.00
Dividend at 12 per cent. per annum	2,111,400.00
Carried forward to next account...	58,122,82

MINING

Mineral Deposits of the Amur, Siberia.—M. Bordeaux, in a communication to the *Société de l'Industrie Minerale*, recently described the mineral deposits of the Amur district. Outside of the quartz veins of Askold Island, gold is only found in the alluvials of the Coast Province. During the past few years the production of gold in the Vladivostok district has ranged between 1,244 and 4,416 ozs. The rivers are, however, becoming exhausted, and search is being made in the interior along the affluents of the Ussuri, and near Lake Hanka. The Askold mine, situated on an island near Vladivostok, has been worked for thirty years, and has produced about 28,000 ozs. of gold. Opposite the island on the mainland are some auriferous veins containing quartz, antimony and arsenic, but they remain unworked. During the last decade several small deposits of argentiferous galena and blende have been opened, the most important of which is at Tétinhé, 240 miles north of Vladivostok and twenty-four miles from the coast, with which it is connected by a railway. There is a little grey copper with the ores, and the richness in silver depends on the presence of the copper and galena. Six levels, totalling a length of over 2,000 fathoms, have been driven one over the other within a depth of 550 ft. Other similar accumulations of ore are worked at Tatuché, Olga, Djighit, Préobrajénié, &c. These deposits in the maritime province may be compared to those worked in the Nertchinsk district of the Trans-Baikal, where there were 448 mines, seventeen of which are important. They have been long worked in a perfunctory manner by convicts, and from 1703 to 1903 produced only 1,470,000 tons. The calamine mine at Tétinhé, near the deposit of argentiferous galena, was opened in 1907, and is now the largest mine in the Coast Province, employing more than a thousand workmen. In 1912, 80,000 tons containing 43 per cent. of zinc were exported. The sulphides of galena and blende are at the contact of porphyry and limestone, whilst the calamine has replaced the limestone. Copper is known to exist in the Coast Province, but has been little prospected. In Siberia there is a bounty of £12 per ton on copper produced in the country, and also one of £4 per ton on lead. Chrome has been found in the Ussuri district in serpentine, and indications of mercury and platinum in the Anadyr valley.

Kailan Mining Administration.—The total output of the Administration's mines for the week ended August 22 amounted to 45,515.75 tons and the sales during the same period to 43,220.75 tons.

Week ended August 29, output 47,082.12 tons, sales 47,216.81 tons.

Week ended September 5, output 44,362.61 tons, sales 41,791.71 tons.

Week ended September 12, output 43,685.55 tons, sales 44,128.70 tons.

PERSONAL

On account of the war Dr. G. E. Morrison and Sir Richard Dane have curtailed their leave and have returned to China.

With regret we record the death of Mr. F. K. Tsao, the chief English Secretary to the Managing Director of the Tientsin-Pukow Railway.

Dr. Henry C. Adams, late Adviser to the Commission for the Unification of Railway Statistics and Accounts in China, has been given a Fifth Class Chia-ho decoration.

Lord ffrench, the representative in China of Messrs. Pauling and Co. has gone to England on leave.

Mr. Alfred Sze, Chinese Minister to London, has left to take up his post.

Colonel Sibert and the other members of the American Red Cross Hwai River Commission have sailed for America.

Mr. A. W. U. Pope, formerly General Manager of the Shanghai-Nanking Railway, has joined the British army on the Continent as a volunteer.

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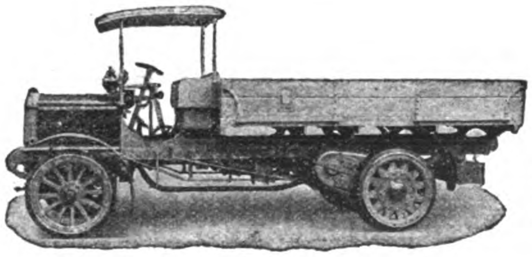

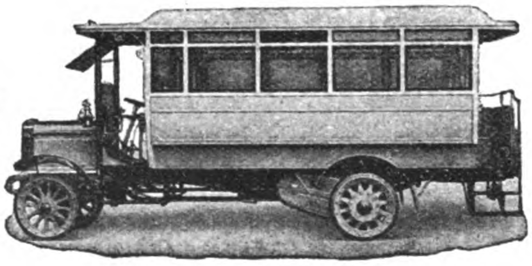

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Manila Railroad Co.
South Manchuria
Southern Pacific Co.
Chosen (Korea) Railways.

Railroad Supplies
American Locomotive Co.
Andersen, Meyer & Co.
Arnhold, Karberg & Co.
Baldwin Locomotive Work.
Fearon, Daniel & Co.
Hannoversche Maschinenbau A. G. Vormals Georg Egestorff.
Henschel & Sohn.
P. Herbrand & Co.
Jardine, Matheson & Co., Ltd.
Melchers & Co.
Shewan, Tomes & Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
Tyer & Co.
U. S. Steel Products Co.
Railway Signal Co., Ltd., The
Robert Dollar Co.
Samuel & Co., Ltd.
Dick, Kerr & Co., Ltd.
Siemssen & Co.

Reinforced Concrete Construction
Shanghai Dock & Engineering Co., Ltd.
Trussed Concrete Steel Co.
U. S. Steel Products Co.

Roofing Paper
California Manila Lumber Commercial Co

Rope Manufacturers
Johnson-Pickett Rope Co.
U. S. Steel Products Co.
Ynchausti & Co.
Shewan Tomes & Co.

Ship-Chandlery
Ynchausti & Co.

Shipping Agents
Cia. General de Tabacos
Shewan, Tomes & Co.
Stevenson & Co., Ltd.

Shipbuilding and Repairs
Fiat-san Giorgio Ltd.
Tsingtauer Werft
Hongkong & Whampoa Dock Co., Ltd.
Mitsu Bishi Dock and Engineering Works
Shanghai Dock and Engineering Co., Ltd.
The Taikoo Dockyard and Engineering Company of Hongkong, Limited

Steamship Companies
Cia. General de Tabacos
Pacific Mail S. S. Co.
Ynchausti & Co.
Toyo Kisen Kaisha.

Steel Manufacturers
United States Steel Products Export Co.

Steel Works
Bohler Bros. & Co., Ltd.
U. S. Steel Products Co.

Stokers
Babcock & Wilcox Ltd.

Structural Steel
Bohler Bros. & Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.

Sugar Machinery
A. F. Craig & Co.

Superheaters
Babcock & Wilcox Ltd.

Tanks
Pacific Tank and Pipe Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.
A. F. Craig & Co.

Telephones
The Western Electric Co.

Textile Machinery
A. F. Craig & Co.

Tiles and Bricks
Green Island Cement Co., Ltd.
Chinese Eng. Mining Co.

Tobacco Dealers
British-American Tobacco Co., Ltd.
Cia. General de Tabacos
Olsen & Co., Walter E.

Tools
American Tool Works Co.
Lodge & Shipley Machine Tool Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.

Windmills
Defiance Machine Works.

Water Softeners
Babcock & Wilcox Ltd.

Wood Working Machinery
American Tool Works Co.
Defiance Machine Works.
Lodge & Shipley Machine Tool Co.
Shanghai Dock & Engineering Co., Ltd.

THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

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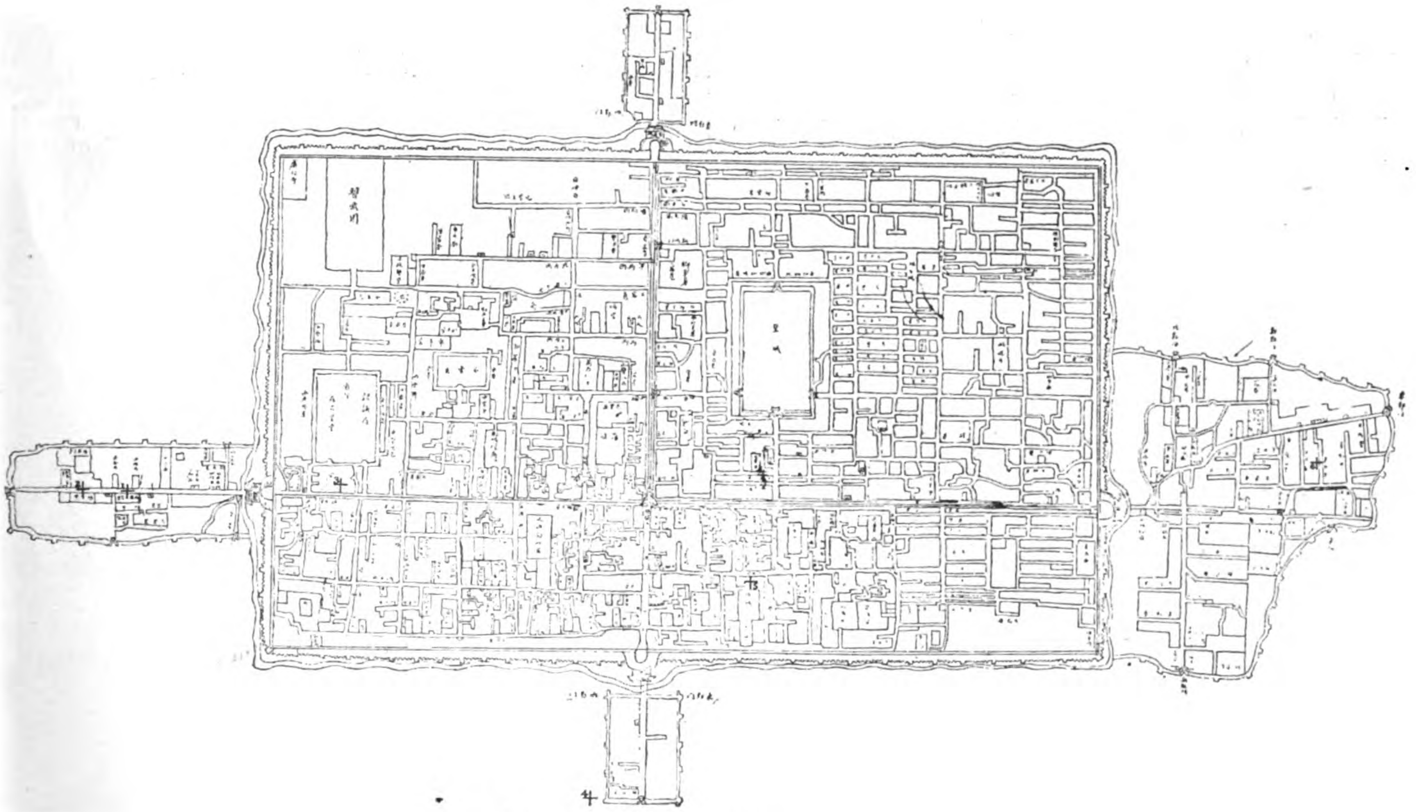
COMMERCIAL AND INDUSTRIAL NOTES ON SHENSI

BY CONSUL C. L. L. WILLIAMS, DALNY (DAIREN), JAPANESE LEASED TERRITORY.

Shensi, one of the 18 Provinces of China proper, occupies an area of about 75,270 square miles in the northwestern part of the Republic. It supports an estimated population of 8,500,000, of which number the greater part live in the southeastern portion of the Province, where are practically all of the important cities, including Sianfu, the capital, which the writer visited last November.

Owing to its geographical isolation, Shensi remains one of the least-known Provinces of China proper. For imports there are three trade routes in general use: (*a*) Up the Han River from Hankow to Loahokow, thence via a small tributary of the Han to Lungchutsai, thence by pack mule over the hills to Sian; (*b*) from Honanfu (Loyang) via Tungkuan to Sian by pack mule or cart; and (*c*) from Taiyuanfu in Shensi by pack mule via Tungkuan or Tungchow. The route by the Han River takes about two months from Hankow. It is said that the freight works out by this route at about 3 tael cents per catty from Hankow to Sian, or say, roughly, $33 U. S. per ton (varying with exchange). Owing however, to the time consumed in transport and to the fact that only goods which can be packed by mule can be handled, this route is not popular.

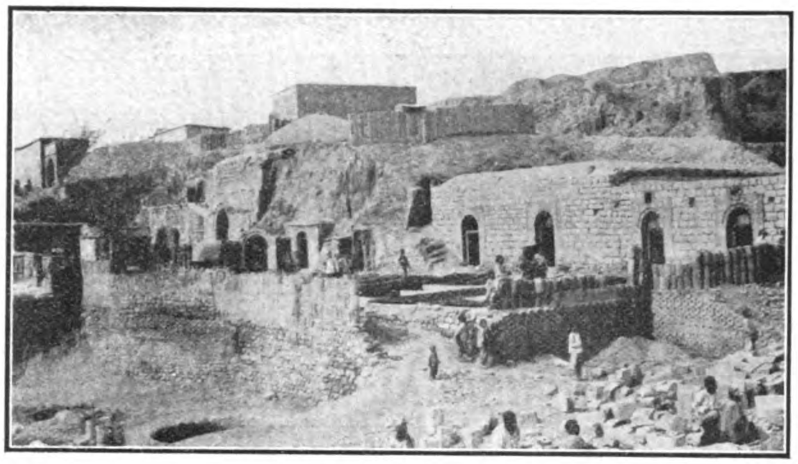


SIAN, CAPITAL OF SHENSI.

ROUTE TO SIAN MOST USED—FREIGHT RATES

The usual route is that by Tungkuan from Honanfu. To reach Honanfu goods travel from Hankow to Chengchow by the Peking-Hankow Railway, thence to Honanfu by the Pienlo Railway. The trip overland to Sian takes 8 to 12 days or longer, depending on the state of the roads, the distance being about 275 miles.

There are three methods of transport—by country cart, passenger cart, and pack mule. A country cart carries from 1,000 to 2,000 pounds in weight, a passenger cart up to about 1,000 pounds, and a pack mule about 350 pounds. Prices vary greatly according to the state of the roads. Under good conditions a country cart moderately laden costs about $22 U. S. currency per trip, passenger cart, $11, and a pack mule $5. During the rainy season the roads are impassable for any kind of cart, and are difficult even for pack mules. At such times the prices charged for transport advance enormously. The postal service contracts for a yearly daily service by pack mule between Honanfu and Sian at $37.50 U. S. currency per ton, nearly $0.14 per ton or per mile.



Chinese Pottery.

The routes from Taiyuan to Sian are seldom used since the advent of the railway to Honanfu.

INTRODUCTION OF FOREIGN WARES.

Despite these handicaps considerable quantities of foreign goods find their way into Shensi. Kerosene, selling at approximately $3.50 U. S. per case of 10 gallons; cigarettes, candles, cotton piece goods and yarn, woolen goods, artificial indigo, and printing paper, in addition to a great variety of small sundries, are commonly seen in transport or on sale in the principal cities. Sewing machines of American origin are in very general use among tailors and in the better-class homes.

There are two methods in vogue of introducing foreign goods into the interior; one may sell them at a treaty port, such as Shanghai or Hankow, to a Chinese dealer, who sells them in turn to his connections in the provinces, or one may market direct through native selling agents at the principal interior marts. The former method is used with cotton and woolen goods, indigo, paper, some other staples, and with sundries, while the latter is in general use for the sale of kerosene, cigarettes, and sewing machines. Where the latter system is used the selling companies generally employ foreign inspectors, who travel continually, each throughout his own district, conducting advertising campaigns, reporting on local conditions, and supervising the business of the native selling agents. As foreign firms are precluded by treaty arrangements from establishing branch houses outside the treaty ports, until this restriction is removed it would seem that the native selling agent offers the best solution of the problem of conducting business in the interior.

CROPS OF THE PROVINCE—MULE BREEDING.

Although a fertile farming country, Shensi, in recent years, has had only one staple of export, opium. As in other provinces, the cultivation of the poppy has now been officially prohibited. Reports as to the effectiveness of this prohibition vary with the district from which they come, with the opportunities of the observer, and with his bias on the opium question. They generally concur, however, in stating that a considerable acreage formerly put to opium has recently been put to other crops. Opium is a very valuable crop, and the suppression of its cultivation will doubtless work a very real, if temporary, hardship to the farmer, who can not replace it with anything else from the standpoint of returns per acre. The comparative sparseness of the population will prevent this problem from becoming an acute one in Shensi. The authorities are exerting themselves to popularize the silk and cotton industries as an alternative means of support for those who have depended on opium.

Other staple crops in the province are cotton, millet, maize, kaoliang or tall millet, buckwheat, wheat, beans and persimmons and some other varieties of fruit. Near Tungkuan, in the eastern extremity, of the Province, rice is not infrequently seen. A very small percentage of the agricultural produce of the Province is exported. The rarity of serious floods render conditions more favorable for farming than in many other parts of China. Drought is the greatest danger, but it is now nearly 12 years since there has been acute suffering on this account. There exists a considerable opportunity for colonization in the northern part of the Province, of which many natives of Shantung Province have been availing themselves.

Shensi is known over the whole of North China for its splendid mules; these are bred by peasant farmers. Mules bring from $110 U. S. currency upward, and are largely exported from Shensi to other Provinces.

HAICHOW-LANCHOW RAILWAY.

The most important public work now in hand is the railway from Honanfu to Lanchow in Kansu, via Sian, traversing Shensi from east to west. Honanfu is now the western terminus of the Pien-lo Railway, which crosses the Peking-Hankow line at Chengchow and has its present eastern terminus at Kaifengfu, the Capital of Honan. It is planned to extend the line, however, to Haichow, a seaport on the coast of Kiangsu. Work is actively proceeding on the section between Honanfu and Tungkuan, the line being open for traffic as far as Tiehmen, some 45 miles from Honanfu and 230 miles from Sian. When completed this railway will solve the transportation problem, now the greatest hindrance to foreign trade in Shensi. It is hoped that traffic may be running to Tungkuan in two years and to Sianfu in three. The construction work is being undertaken by a Belgian syndicate for the Chinese Government, under the supervision of inspecting engineers appointed by the latter.

MODERNIZING THE TARTAR QUARTER OF SIAN.

During the revolutionary disturbances the Tartar quarter, which was situated in the northeastern part of Sian and occupied about one-fourth of its total area, was completely burned to the ground, the only structure left standing after the fire being the massive walls of a ruined palace inclosure. The provincial authorities are now planning to rebuild this part of Sian on modern lines. A commencement has been made by pulling down the southern wall of the old Tartar city, converting it into a broad thoroughfare, and lining the street so made with 2-story shop buildings. To the foreign observer these appear to be of extremely flimsy construction, but they compare favorably, nevertheless, with buildings used for similar purposes in other parts of the city. The work of construction has been carried on at Government expense, the aim of the authorities being to popularize the quarter by renting the newly erected shops to the public at a nominal figure. It is reported that the Government intends to build offices for the provincial administration on this new road, and a new post-office building, on foreign lines, is already in course of construction there.

Owing to the expense of hauling road-making material and the difficulty of transporting the necessary machinery, it is doubtful if the macadamization of the city streets, as has been suggested, is now feasible. With the facilities that will be available after the advent of the railway, this proposel should present no serious difficulties, however. All the principal streets are at present paved with huge stone blocks in the approved Chinese fashion, which, while well adapted to the heavy, 2-wheeled Chinese carts, are impossible for any modern vehicle. A drainage system will be a necessary corollary to the building of modern roads. A rough survey of the city, showing levels, has already been made in anticipation of some such scheme of reconstruction.

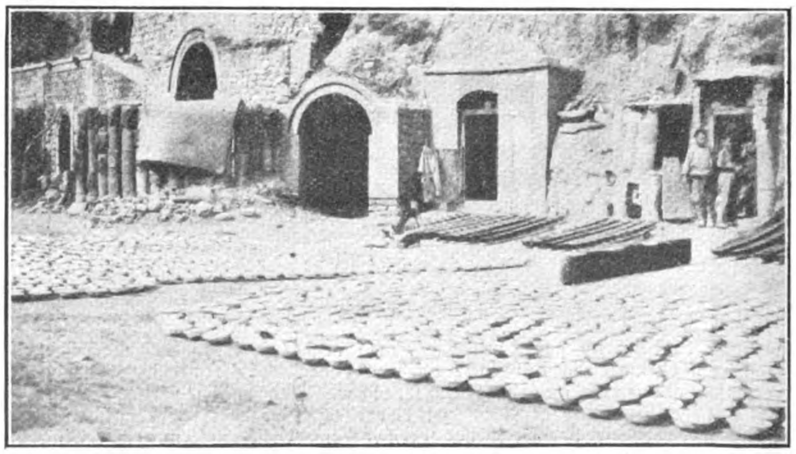
PROVINCIAL INDUSTRIAL EXPOSITION.

In celebration of the second anniversary of the Republic, there was held in Sian a provincial industrial exposition. The recently erected store buildings on the new road, to which reference has been made, provided excellent accommodations for the exhibits. The general scheme was that each political district (hsien or county) should equip a stall with exhibits exemplifying its principal products. There were also special booths for various industrial institutes, for important companies, for certain trades, and for the modern schools. While very small and imperfect if judged from a western standpoint, the exhibition was nevertheless most interesting and instructive, and as a result of its popularity is to be made an annual event. On this occasion exhibits were limited to products of the Province, but it is hoped that later foreign firms will be permited to participate; as the exhibition was popular with the Chinese, a stall should prove a cheap and profitable advertising medium. Among the interesting displays were the stalls of the silk and cotton trades, the exhibits from the copper mines at Chennanhsien, and from the oil wells at Yench'anghsien.

The most popular feature with Chinese visitors was the exhibition of work done in the modern schools. Drawings (taken from foreign copy books, among which were several portraits of George Washington), maps, arithmetic, exercise books, essays in both English and Chinese, and kindergarten work, all done by pupils, constituted the bulk of the display and were a pleasant commentary on the introduction of modern educational methods. The ancient glories of Sian, once the capital of China, were recalled by a number of magnificent bronzes, lately unearthed near Fenghsiangfu, loaned by the provincial authorities for exhibition.

AMERICAN MACHINERY FOR MODERN FLOUR MILL.

A modern flour mill is in course of erection in Sian by the provincial authorities. A large 2-story brick building has been erected, but unfortunately at the time of inspection the machinery had not all arrived and very little of it had been installed. The orders were placed through an American firm in Shanghai and were for the most part for American machines. The power plant consists of a Babcock and Wilcox water-tube boiler (British), working at 150 pounds pressure, and a standard Corliss steam engine (Murray Iron Works, Burlington, Iowa). Electric light is supplied by a 25-ampere dynamo and switchboard built by the General Electric Co. of Schenectady, N. Y., driven by a small steam engine built by Marshall & Co. (Ltd)., Gainsborough, England.



Making Rice Bowl.

TRANSPORTATION IN SHENSI

Going to Market.

The Mule Litter. Putting in the hind mule.

Transporting Ingots of Iron.

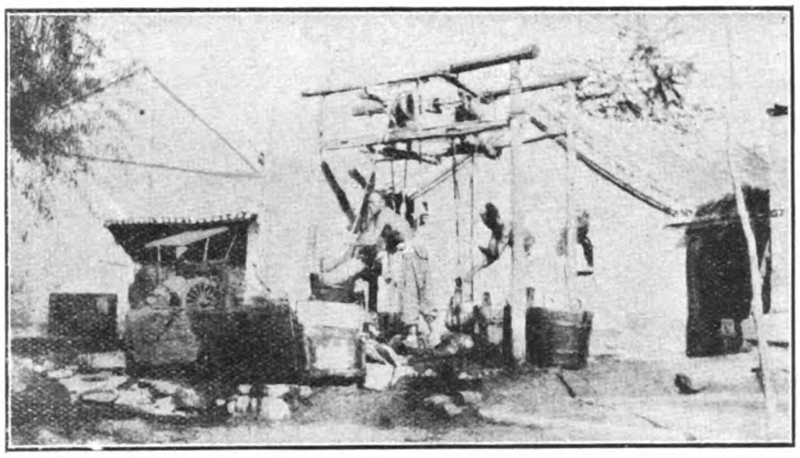
A Peking Cart.

In the Loess Roads.

A Wheelbarrow Load.

The Mails en route.

Planks from the hills.



The Waterworks.

None of the milling machinery was yet in place, but the following were noticed awaiting installation: Middling's Finisher, Thos. McFeely Co., Philadelphia, Pa.; Monitor Adjustable Scouring, Polishing, and Separating Machine, Huntley Mfg. Co., Silver Creek, N. Y.; Barnard Moline Roller Mill, Barnard and Leas, Moline, Ill.; Granulate Bran Finisher, Thos. McFeely Co., Philadelphia, Pa.; Hoppes Exhaust Heater, Springfield, Ohio; and in the machine shop a machine tool drill, for hand use, and a machine tool lathe, for foot power, both built in Shanghai and equipped to be run by power if desired. This will be the first modern power plant in the Province, and the first time that electric lighting has been seen. It is reported that a telephone system is to be installed in connection with the mill, but it was impossible to obtain confirmation of this statement.

INDUSTRIAL TRAINING INSTITUTE.

Near the new flour mill is an extensive group of Chinese buildings given over to the Institute Training Institute. There are in the Institute about 200 students, all drawn from the poorer classes, learning seven different trades. Aside from the master workmen, who are the actual instructors, there is a staff of 15 directors and supervisors.

The majority of the students are engaged in learning some form of the cotton spinning or weaving industry. The spinning is done on small foot-power machines, built locally in wood after the pattern of imported iron machines, each machine having 20 spindles. There are seven of these machines in use, each capable of spinning about 3 pounds of cotton per day. Sixteen boys are in the spinning class.

In the cloth and towel weaving classes there are about 50 students. As with the spinning machinery, the hand looms are copies in wood of foreign iron machines. Six looms are in use for weaving cloth, 12 for making Turkish toweling, and 2 for making coarse huckaback toweling. The thread used is partly imported and partly of local origin. Turkish towels, very commonly colored either pink or blue, and both colored and figured cloth are woven. To this end a considerable part of the Institute is given over to dyeing thread. The cloth looms turn out per day about 30 feet each; the towel looms, 25 towels, 36 inches long.

SERICULTURE—CARPENTRY

A determined attempt is being made by the authorities to popularize the silk industry. Numerous varieties of the mulberry (the food of the silkworm) have been introduced from other parts of China and planted in official gardens. At the Institute the whole process of sericulture is taught, the silk piece goods produced being woven from silk grown and spun on the premises. At the time of the writer's visit it was too late in the year (November) to see anything of the methods of raising the worms or of spinning the silk thread from the cocoons. Weaving, however, was being done on hand looms of a native pattern. Each loom is attended by four workmen and has a daily capacity of about 20 feet of cloth 30 inches wide. Silk goods are dyed in the piece at the Institute, and both plain and figured cloth of various qualities and weights are woven. The silk booth at the Industrial Exhibition was most interesting, as the whole process of sericulture was shown by means of photographs, models of the machinery used, specimens of eggs, worms, and mulberry plants, and bolts of the finished product.

In the carpenter shop very passable copies of foreign imported furniture are turned out in a great variety of woods, of which walnut is the most popular. Better-class native furniture is also made. There are 15 students in this shop

NATIVE COTTON AND WOOLEN RUGS—LACQUER WORK.

In addition to the above, three purely native trades are taught—weaving cotton rugs in the native fashion, weaving woolen Tientsin rugs, and making lacquer ware. Native cotton rugs are woven in a curious fashion. No loom is used, the warp being raised from the floor by brackets some 30 feet apart, between which it is stretched at a distance of a few inches above the ground. The rugs are woven in sections 1 foot wide and 6 feet long, five of such sections being woven in one piece. The operator squats across the warp. with the finished portion of the strip behind him, and moves a small stand, which separates the strands of the warp, along in front of him as he works. The shuttle is thrown by hand from side to side. For the warp foreign imported cotton thread is used, while for the woof native thread is found to be sufficiently good. A pattern is woven in, the right and left hand and middle sections being woven at different times, but with such a degree of accuracy that the figure of the pattern matches perfectly when the rug is assembled, which is accomplished by sewing together the four appropriate sections, making a rug 6 by 4 feet, closely woven and about the weight of a piece of heavy canvas.

All sorts of articles, from small pin boxes to heavy furniture, are manufactured in lacquer. For small articles a base of leather is used; this is wet, placed on a last of the desired shape, and pounded and ironed until it takes the shape of the mold and its edges adhere one to the other. The receptacle so formed is roughly coated with lacquer inside and out, further coats being added until the necessary degree of stiffness is secured. It is then hand polished with wet charcoal until smooth, when the fine upper coats are applied. The number of these depends on the quality and ornamentation desired, articles carved in heavy relief requiring many more coats than those bearing a plain polished surface. For the larger articles, such as furniture, trunks, etc., a wooden base is used. At the Industrial Exhibition a great variety of lacquer ware was on view, including a pair of very handsome Chinese wardrobes with paneled doors. These measured about 6 feet in height by 5 in breadth by 1¼ feet in depth and were sold for about $22 U.S. for the pair.

WEAVING TIENTSIN CARPETS—INSTITUTE GRADUATES.

The third of the purely Chinese trades taught is the weaving of Tientsin rugs or carpets. The warp and woof of these are heavy cotton thread, generally of foreign origin, and the pile either camel's hair or wool. The warp is stretched vertically from a fixed support at the top over a roller at the bottom. The woof and the pile are put in by hand. Several workmen are engaged on the same rug at the same time, as each man can handle but 5 feet in width on the rug. The pile is applied by knotting woolen yarn loosely about the warp; the ends of the yarn are then cut roughly with a knife. The woof is next woven in above the last line of pile, and hammered down with a small woolen mallet. The pile is now trimmed to the desired length with shears, and the process repeated for each line of pile. When several feet of the rug have been completed the finished portion is taken up over the roller at the bottom, the warp being adjusted at the same time on the fixed support above.

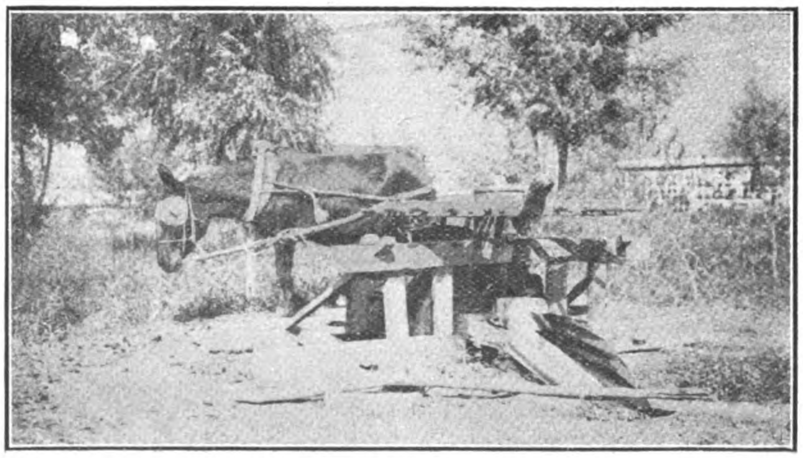
Rugs are woven at the rate of a foot a day, the number or workmen on each rug depending on its width, as explained above. Most intricate patterns are woven with no guide for the workmen beyond their memories. The price of a rug depends on its quality, which is judged by the material employed and the number of strands of woof to the inch. That on the loom at the time of inspection was roughly 15 feet square and was valued at $22.

The students in the Institute receive no pay, but are given board and lodging. No apprenticeship fee is asked, as the intention is to draw the students from the poorer classes. The students appear younger than would be expected, being boys of 10 to 15 years of age. Work begins at 7 in the morning and continues until 5 in the evening, or as long as daylight lasts. The course is of three years, at the end of which time those who have qualified are in a position to earn from 4 to 7 taels per month ($3 to $5), which is considered good wages in Shensi. Some of the graduates are retained at the Institute as instructors, others secure positions as instructors in similar institutes in other parts of the Province, while the majority are expected to find work with the general public.

OIL WELLS OF SHENSI.

The existence of oil in considerable quantities in the Province of Shensi has been known for many years. It is only recently, however, that there has been any attempt to make commercial use of these deposits. Some two or three years ago a Chinese company was formed to exploit this field. Four successful wells have been drilled, of which, however, two have had to be abandoned. Two remain in operation and yield a daily output of about 2,700 pounds of oil. A much larger quantity could be produced, but the available supply of labor is insufficient to meet the present demands, and expansion is therefore impracticable for the moment. The oil is refined at the wells and packed in 5-gallon cans, two to the case, in the fashion made familiar the world over by American exporters of kerosene. The wood used in the manufacture of cases is of local origin and inferior quality, while the tinned sheets for the cans are imported from abroad and set up at the factory.

(Continued on page 143)



Drawing Water.

TYPES OF LOCOMOTIVES

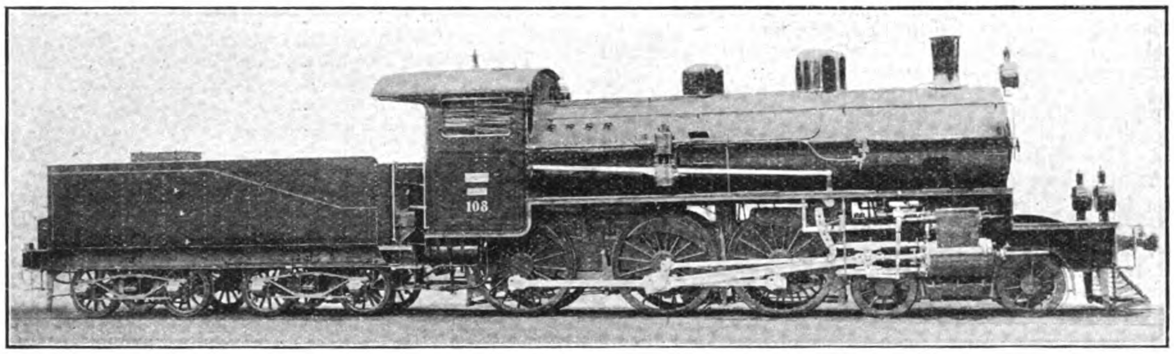
MESSRS. HENSCHEL AND SOHN

Illustrations herewith show some types of locomotives supplied to the Far East by the Locomotive Works of Messrs. Henschel and Sohn of Cassel, Germany. The first is a 4:6:0 passenger locomotive supplied to the Tientsin-Pukow Railway.

This engine has the following chief characteristics:

Gauge...	1435 mm
Diameter of steam cylinders	540 mm
Stroke of pistons	630 mm
Diameter of drivers	1750 mm
Diameter of truck wheels	1000 mm
Rigid wheel base	4300 mm
Total wheel base	8100 mm
Working pressure...	13 kil. p. sq. cm
Heating surface of fire box...	13,77 sq. m.
Heating surface of boiler tubes...	160,93 sq. m.
Heating surface, total	174,70 sq. m.
Grate area...	2,61 sq. m.
Weight empty...	61000 kilos
Weight in working order	68500 kilos
Adhesive weight	48000 kilos

The locomotive has three pairs of coupled wheels, the middle pair of which are the driving wheels, and a 4-wheeled bogie in front. The boiler barrel, having a mean diameter of 1700 mm, is equipped with 294 steel boiler tubes of 46-41 mm diameter. The water space between the single tubes at the fire box tube plate is 34 mm, and the length of tubes between the 2 tube plates, is 4250 mm. The fire box shell is placed between the frame plates and encloses the deep down reaching copper fire box. On account of the very clinkery quality of coal to be burnt by the engines, a rocking grate is provided. The mountings of the boiler consist of 2 pop safety valves, system Coale; 2 steam injectors system Schäffer and Budenberg, each of an output of 180 litres per minute; 1 water gauge with 3 test cocks; 1 boiler filling cock; 2 boiler feed valves; 1 steam whistle; 1 steam gauge, with test gauge cock. The throttle valve of the Schmidt and Wagner type is placed inside the dome and can be operated from the engine cab.



Passenger Locomotive supplied to the Tientsin-Pukow Railway.

The frame is formed by two strong and substantially built up plates of 30 mm thickness which are well stayed to each other by means of longitudinal and cross stays as well as by the buffer plates and the coupling box.

The steam is distributed by means of Hoff balanced flat slide valves, which are operated by the Heusinger valve motion.

The double roofed engine cab has glass windows which can be replaced in the summer by wood shutters.

The compressed air Westinghouse brake acts on one side of the driving and coupled wheels as well as of the wheels of the tender. Besides this a hand lever brake for the tender is provided. The engine is further equipped with a compressed air sander for sanding the driving wheels, a de Limon steam driven lubricator for pistons and slide valves, a steam heating arrangement, and a cow catcher in front of the buffer beam.

The tender holds 20 cubic metres of water and has a coal capacity of 6,000 kilos. It rests on 2 four wheeled bogies and has a weight empty of 22,500 kg; its weight in working order is 48,500 kg.

The draw and buffing-gear consists of an automatic claw coupling, system Henricot, with a release device, which is operated from the side.

The next is a 0:6+6:0 Mallet superheated steam locomotive with tender, supplied to the Japanese Government Railways.

This locomotive is designed for hauling goods trains of about 400 tons gross weight on gradients of 20 o/oo at a speed of 25 kilometers per hour, and goods trains of 1400 tons gross weight at a speed of about 45 kilometers per hour on the level. The engine must be able easily to take curves having a radius of 90 meters. The required high tractive force combined with the narrow gauge of 3.6 (1,067 mm) necessitates 6 pairs of driving wheels which arrangement with regard to the curves can satisfactorily be found in the Mallet type only.

The engine has therefore two groups of frames, each with 3 pairs of coupled wheels. Both groups are flexibly articulated whereby each of them can easily accommodate itself to the radius of the curve.

The boiler is rigidly fixed to the rear frame; above the cylinders it is kept in position by means of a cast steel saddle piece riveted to the latter. Whilst thus side movements of the boiler are prevented, it may expand forward and backward. The boiler is amply dimensioned and, in order to increase its capacity, is fitted with Schmidt's superheater, which is placed inside of 16 flue tubes of an outside diametre of 140 mm. From the throttle valve in the dome, the steam enters, at the front-tube plate, the superheater header, then passes the superheater tubes placed in the 16 large flue tubes and returns to the superheater header. Through this process the temperature of the steam is raised to 330-350 centigrades. From the superheater header the steam flows now through two pipes fitted at the end with glands and conducted along the outside of the boiler, to the H. P. cylinders, from where the last axle of the rear group is driven. After having worked in the H. P. cylinders, the steam is conducted through a receiver which on its both ends is flexible in glands and which are movable in the longitudinal direction to the L. P. cylinders driving the front group of wheels. From there it passes through a flexible exhaust pipe and escapes through the chimney. In order to facilitate the engine especially when starting and hauling heavy trains, live steam can be admitted to the receiver through a valve connected to the valve gear, when the latter gives large admissions of steam to the cylinders. All cylinders have piston valves with inside admission, which valves are moved by Heusinger gear. The valve gears are guided by each other, the low pressure gear is, however, arranged in a manner that it will always give a somewhat higher admission than the high pressure gear. The piston valves and steam pistons are lubricated by means of grease pumps, the high pressure cylinders by one with 6 feeds and the L. P. cylinders by one with 4 feeds, both being driven by the H. P. valve links.

The frame, of the American bar frame type, is substantially braced by cross stays. The springs of the rear frame axles are placed in suitable openings of the frame and are carried by axle boxes resting on balancing beams. The springs of the front truck are placed in the usual manner above the axle boxes and frame, and are also connected by balancing beams. As the front trucks of such engines tend to hunt, when running in the straight, a strong centering spring is placed beneath the smoke box, which considerably reduces the movements of the front truck. This spring serves besides to centralize the front bogie, when the engine is leaving curves.

The tender is carried by 3 pairs of wheels and holds about 12.5 tons of water and 3-4 tons of coal. The front axle of the tender is rigidly fixed to the frame, whilst the second and third axles are united to a bogie of the Diamond type. The tender is therefore able to pass through every curve with facility.

Both engine and tender are braked by an automatic vacuum brake; three brake cylinders act on the locomotive wheels and one on the tender wheels. Besides this a powerful hand brake for both engine and tender is provided.

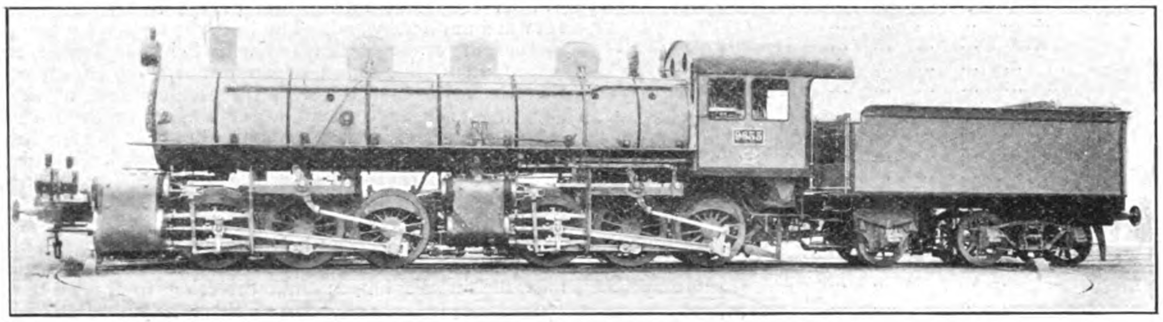
Apart from the usual mountings, etc., of the boiler among which there is also a rocking grate, the locomotive as a special device for cooling, on runs over long distances, the brake blocks by water from the tender. There are further 2 sand boxes, one for each steam truck. The cab is very spacy.

The third is a 0:6:2 tank locomotive for the Japanese Government Railways.

This type of engine, a large number of which was supplied to the Japanese Government Railways, has the wheels as well as the slide valve chests and the valve motion inside the frame, whilst the cylinders are placed outside. The engine has three pairs of coupled wheels, the middle of which are the driving wheels, and a two-wheeled rear radial truck. Its chief outlines and charateristics are the following:

Gauge...	1067 mm
Diameter of Steam Cylinders	406 mm

Stroke of pistons	610 mm
Diameter of Drivers	1245 mm
Diameter of truck wheels	965 mm
Rigid wheel base	3820 mm
Total wheel base	6020 mm
Boiler pressure	11,2 kil. p. sqcm.
Grate area...	1,34 sq. m.
Heating surface	94 sq. m.
Water Provision	6,8 cb. m.
Coal Provision	2,1 cb. m.
Weight, empty...	about 38000 kil.
Weight in working order	about 50500 kil.
Adhesive weight	about 40000 kil.
Tractive power	5420 kil.



Mallet super-heated locomotive supplied to the Japanese Government Railways.

Boiler: The boiler has vaulted fire box shell crown running out in the boiler barrel and is fitted with a deep copper fire box, which has a straight crown sloping towards the back. Crown and side plates consist of one single piece. The corners are made of large radius. The crown of the fire box is supported to that of the fire box shell by means of mild steel stay bolts, the front four rows of which are made flexible. Above the fire box crown the fire box shell is braced by means of cross stays. The straight side plates as well as the front and rear plate of the fire box are stayed by copper stay bolts with holes drilled in at each end. The top and front rows of stay bolts of the side plates are made of Stone's bronze and have four slits with a view to making them particularly flexible. The back plate of the firebox-shell is connected to the smoke box tube plate by means of longitudinal stays.—The longitudinal seams are butt-jointed and double riveted, the cross seams overlapped and single riveted. The boiler barrel has a average diameter of 1,230 mm and is fitted with 192 brass boiler tubes of an outside diameter $1\frac{3}{8}$," the ends of which are protected against burning through by steel ferrules. From the top part of the steam dome which is placed on the boiler barrel, the steam is allowed to flow to the cylinders by means of a throttle valve.

Mountings: The boiler is fitted with a spring loaded double safety valve, 2 water gauges with ball lock, 2 combined Gresham and Craven injectors, 1 Bourdon steam gauge, 1 test steam gauge, 1 blow off cock, 1 blower cock and two steam whistles mounted on a common bracket.

Frame: It consists of two side plates, which are substantially braced by means of strong sheet and angle irons as well as by cast steel stays. On the front and rear are strong cross plates, to which the buffers and draw hooks are fitted in accordance with the specification of the Japanese State Railways.

Motion Gear: Axles, tyres, connecting, coupling, and piston rods are of Siemens Martin steel, whilst the wheel centres are of cast steel. The axles box bearings are of gun metal and have white metal linings. The cast steel axle box bearings can be adjusted by means of adjusting wedges. The radial axle is kept in its central position by a spiral spring, which has an increasing return power. The engine is carried by laminated springs, which are placed below the compound axles and above the truck axle. The springs of the two front axles are united by compensation beams.

Valve Motion. The steam distribution is done by simple plain gun metal slide valves operated by the Stephenson valve motion. The engine is reversed by means of a lever.

Cab. The locomotive has a spacy cab, which is provided with a roof to protect the staff. The two windows in the front and the back of the cab as well as those provided on either side enable the driver closely to watch the track. On account of the special climatic conditions, which were to be taken into consideration, the engine was fitted with a double roof of teak wood.

Water Tanks and Coal Bunkers. The water tanks are placed on either side of the boiler and are projecting into the cab. Another tank is arranged behind the cab and carries in its upper part the fuel provisions. As the majority of coal and water provisions are resting on the rear truck axle, the adhesive weight is not sensibly influenced by the variations of weight of the fuel and water provisions.

Brake. The engine is fitted with a screw brake and a vacuum brake, made by the Vacuum Brake Company, both operating the same rigging and acting on the brake blocks of the coupled wheels.

Sander. When running forward the engine is sanded by the cast iron sand box placed on the top of the boiler, whilst at the backward run sand is taken from two boxes placed underneath the running board. All sand boxes are operated from the cab by sand.

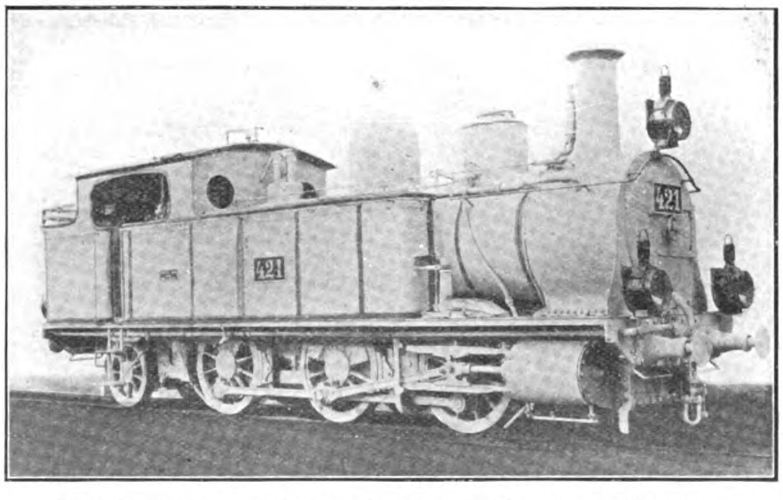
Lagging. Boiler and cylinders are provided with tightfitting sheet coverings.

Pistons and slide valves are oiled by a Wakefield lubricator. The engine is provided with all necessary tools and appliances. All materials were made in accordance with the specification of the Japanese Government Railways.

Finally there is a 0:8:0 Tank Locomotive with front and rear adjustable axle of the Klien Lindner type; supplied to Java.

This type of locomotive, has been supplied in great quantities to sugar plantations on Java. In order to meet the requirements of the purports, it is destined for, the locomotive is fitted with four pairs of coupled wheels, the front and rear of which are adjustable and of the Klien Lindner type. The wheels are placed inside the frame, whilst the cylinders and the motion gear are arranged on the outside. The main features and outlines of this locomotive are the following:

Gauge	750 mm
Diameter of cylinders	240 mm
Piston stroke	300 mm
Diameter of wheels	630 mm
Rigid wheel base	800 mm
Total wheel base	2300 mm
Boiler pressure...	12 kil. p. sq. cm.
Grate area...	0,49 sq. m.
Heating surface	24,1 sq. m.
Water provision	2, - cub. m.
Fuel provision	1,5 cub. m.
Weight, empty...	about 11000 kil.
Weight in working order	about 14800 kil.
Tractive power ...	1980 kil.



Tank locomotive supplied to the Japanese Government Railways.

Boiler. It is of the ordinary locomotive type and has a copper fire box with a flat crown, which is running out into the side plates in a large radius. The fire box crown is united with the crown of the fire box shell by means of iron crown stays. The straight side plates as well as the front and back plates are braced by cross stays. The back part of the fire box shell and the smoke box tube plate are strengthened in their top part by means of plate stays. The longitudinal seams of the boiler are double, the circular ones single riveted and in either case overlapped. The boiler barrel is fitted with seamless drawn mild steel boiler tubes and carries on its top part a dome, from which by means of the regulator the steam is admitted to the cylinders. The boiler is fitted with all accessories and fittings prescribed by the Dutch Indian Law for land boilers.

Frame. The frame is placed outside the wheels and consists of two lateral plates thoroughly braced by cross stays. On the front and rear ends of the frame strong buffer beams are fitted, which carry the draw and buffing gear. The front and rear coupled hollow axles allow of axial and radial play and ensure a smooth rounding of curves.

Driving Gear. Axles, tyres, driving, coupling, and piston rods are of Siemens Martin steel, whilst the wheel centres are of cast steel. The slide bars are of mild steel, forged, and have case hardened wearing surfaces. All bearings are of best bearing metal and have white metal liners. All eyes, forks, and bolts of the valve gear parts are case hardened.

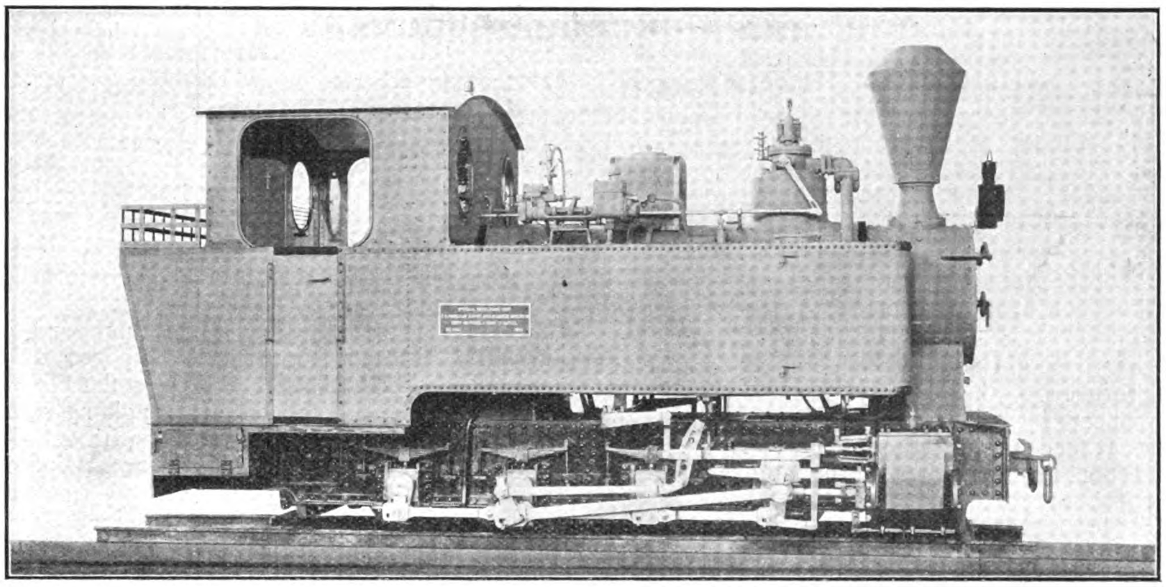
Valve Gear. The steam is distributed by a simple flat slide valve, which is operated by the Heusinger valve motion. The engine is reversed by means of a lever.

Cab. The spacy cab is covered by a roof.

Tanks and Bunkers. The water tanks are placed in front of the cab on either side of the boiler, whilst for the fuel a bunker is provided behind the cab across the frame.

Brake. The engine will be fitted with a counter-weight and a steam brake, which operate the same rigging and act on the middle axles. There is further a counter steam brake, which will be put in action when the engine is passing long and steep slopes.

The chimney is of American design and constructed as a spark arresting chimney. Boiler and cylinders are protected against loss of heat through radiation by means of sheet covering. A central lubricator oils cylinders and slide valves. The sand box is placed on the top of the boiler and operated by hand; it renders it possible to sand the wheels in either direction. The engine is equipped with all necessary tools and appliances. The materials used for the construction are made in accordance with specifications of the Prussian State Railways.



Tank locomotive supplied to Java.

(*Continued from page 140*)

The machinery in use is partly of American manufacture and partly of Japanese. Power is supplied by a gas producer plant using oil for fuel. There appear to be no competent engineers employed, and only a few Japanese mechanics. A case of 10 gallons of the company's oil sells in Sianfu for about $3.50 U. S.

Apart from the shortage of labor mentioned the greatest handicaps under which this enterprise suffers at present are lack of transportation facilities from the wells to distributing centers, and insufficiency of capital. The wells are situated in Yenchang district and are about 150 miles from Sianfu in a northerly direction. They are close to a small tributary of the Yellow River, some 20 miles above its junction with that stream. This waterway forms the only practical route for shipping the oil out; at best, it is unsatisfactory and comparatively expensive. Yenchang district being over 100 miles north of the proposed line of the Hai Lan [Haichow-Lanchow] Railway, no relief can be expected from the construction of that line. Possibly the projected railway from Taiyuanfu in Shansi to some point in Szechwan may pass somewhere near to the wells. The company requires more capital, which, however, it is unable to secure at present, owing to the general dislocation of trade consequent upon the revolutionary disturbances and to the stringency of the Shensi money market.

CHINESE POSTAL SERVICE.

Of the innovations and modern methods introduced by the foreigner into China, few are more appreciated than the postal service. Originally a branch of the maritime customs, maintaining a limited service between the principal ports, the Chinese postal service has been developed during the last 20 years until it is now possible to mail letters into practically every district city in China, while domestic postage rates on letter mail are lower than in the United States. An efficient and popular money order system is in operation between the principal offices, which, in many interior districts, affords the only safe way of remitting funds from place to place. Despite the fact that there is no steam transportation of any sort in Shensi, the postal service has opened more than 180 offices in the Province, which are maintained by about 6,000 miles of courier lines and is constantly opening up new offices. A parcels service is in operation, for which pack mules are used, while the fast letter service is maintained by a day-and-night foot courier, covering 60 to 70 miles per day.

SHANGHAI MUNICIPAL ELECTRICITY DEPARTMENT

The tender of Messrs. Andersen, Meyer & Co., has been accepted for the supply of eight 80 H. P. 3-phase motors for the Shanghai Municipal Electricity Department.

Following are the tenders received:—

Jardine, Matheson & Co., Ld ...	£1,441.10
Siemens China Co. ...	1,130.0
Anderson, Meyer & Co ...	1,009.5

GERMAN TRADE IN CHINA

Before the outbreak of war an article was published in a Leipzig paper calling attention to the insufficient interest taken in Germany in the possibilities of trade development in China. The article, which is said to be written by a member of the Stötzner Szechuan Expedition, remarks that the German merchant is not as active as his competitors in China. The annual value of the imports from Germany only amounted in 1913 to about £4,270,000 or about 5 per cent. of the total imports, whereas the imports from the British Empire amounted to 56 per cent., from Japan to 20 per cent., and from the United States to 6 per cent. of the total. Some idea of the possibilities of developing trade with China may be gained from the fact that the imports into that country only average 2s. 6d. per head per annum as compared with £1 per head in Japan. The German merchant in China is exhorted to devote more attention to the sale of German goods, and not to act, as at present, mainly as a dealer in British goods. Presistent advertising, both by posters and the distribution of samples, is recommended.

The article advocates the sale of articles of popular use, and suggests that goods should be sold in packets containing a selection of small articles used together; for example, a packet might be made up in accordance with Chinese taste containing a selection of needles, cotton, coloured wool and a few buttons. Such a packet should sell for about a penny and should be conspicuously marked with the maker's name. Similarly patent medicines, with directions in Chinese, might find a market. In all cases, however, the small purchasing power of the individual Chinaman must be borne in mind.

PHILIPPINE CEMENT MAKING

Work on the new $600,000 cement factory at Binangonan, Province of Laguna, is progressing rapidly and it will probably be in operation by December 15, 1914. It will be one of the largest manufacturing enterprises in the Philippines and will have an annual capacity of 150,000 barrels of cement. It will furnish employment for about 1,000 men, half of whom will be laborers, the remainder more or less skilled. A 5-mile aerial cableway will convey the limestone from the quarry at the rate of 27 miles an hour and deliver it in the storage room of the plant without rehandling. A large pier is being built out into Laguna de Bay, from which the cement will be loaded into lighters for shipment to Manila. A barrel factory will be operated on the premises to utilize native timber. The plant will be operated by electricity enerated from steam power.

THE MENACE TO HEALTH IN HONGKONG AND SHANGHAI

THE NIGHT SOIL PROBLEM

When the European came to the East, settled down and built his homes and offices, the problem of house drainage and the disposal of night soil was readily solved. He simply fell into the ways of the natives and adopted the antiquated system of hand removal. The solution was easy and the vexatious engineering problems involved in designing a proper sanitary drainage system were so complicated, and the probable cost so excessive that the municipal authorities of the various ports in time came to look upon the Chinese way as the best for all concerned.

The disposal of the night soil through native contractors who resold the refuse to the nearby farmers, gradually developed into a most lucrative business from which the municipal treasuries reaped a handsome income. And as year followed year and the little foreign ports and settlements expanded into the present great commercial entrepots of the Orient, the ordure business also grew and prospered, the profits and municipal incomes keeping pace with the rapid increase in population. As the difficulties of establishing modern sanitary systems increased with the development of the ports, and the municipal treasuries each year reaped a still higher revenue from the disposal of the night soil, and as each year saw the erection of larger and more expensive buildings without the slightest pretext of conforming to modern sanitary ideas, the large landlords and their representatives on the Municipal Councils, began to defend the abominable traffic as the most economical, and most conducive to the health of the community. And so the system has been officially approved and the ratepayers educated into the belief that there is no other way out. The Chinese contractors cart the refuse away to the fields, and the farmers return it to the ratepayers in vegetable truck loaded with death-dealing cholera, typhoid and dysentery germs. And the yearly toll is mutely paid by the long-suffering ratepayer in shattered health or by the greatest price of all and still, no protest is raised, nor demands formulated for a remedy. Ask any man in Hongkong or Shanghai why the town is not provided with modern sanitary arrangements, and he will find many good reasons and excuses for the existing system. It has been drilled into him by the reading of official reports, and with blind faith he accepts the reasons given as a matter of course.

But we are glad to see that Hongkong is waking up. Singapore and Manila, for years the centers of plague and other epidemics, have expended huge sums in modern drainage systems and as a consequence life is now safer and more enjoyable in those ports. On the other hand, newcomers and visitors passing through Hongkong and Shanghai, are loud in their condemnation of the utter absence of modern sanitary improvements in the hotels and houses of these ports. There are exceptions however to this, as there are a few hotels on the China Coast who have advanced as far as the law will permit them to.

It is an old problem and has been threshed out time and again, but as the years pass rapidly on, it must be squarely faced and some solution other than the existing one, found. We are glad to see that there are a few public spirited men in Hongkong who realize the gravity of the problem in that Colony, and who have requested the Government to appoint a commission which will make a comprehensive inquiry and report on a proper water carriage system, without which no drainage problem could be solved. The *Hongkong Telegraph* commenting on the situation says: "There are some members of the Sanitary Board who realise that point, as the discussion at yesterday's meeting showed. Chief of these is Dr. Fitzwilliams, a man to whose opinions due weight should be given. In his view, Hongkong is not an up-to-date sanitary city—it is one which is labouring under an antiquated system which has many deficiencies. That submission is one which will, we are sure, be endorsed by nine-tenths of the inhabitants of the Colony, who have suffered too long the inconveniences of existing methods for the disposal of sewage. The main objections which have been levelled against the adoption of the water-drainage system in Hongkong are that the place is not easy to drain, and that sea-water (of which we surely have an abundance!) is not suitable for flushing purposes. But Dr. Fitzwilliams disposed of these contentions very quickly. He showed how in a flat place like Cairo, which has none of the advantages of Hongkong so far as drainage is concerned, such a system operates with excellent results, and he might have come nearer home and pointed also to the case of Shanghai. Then he cited Gibraltar, which has much the same physical formation as Hongkong, and indicated how well the system worked there. Far from being a difficult place to drain, Hongkong is an extremely easy one. Then, too, the doctor pointed out that sea-water is utilised for flushing in many places with excellent results. The fact is, of course, that it is all a question of money, but that should not stand in the way of a solution of the problem. The Colony's health should be the first consideration of the Government, whatever the cost."

There are perhaps good reasons why the existing water mains of Hongkong should not be utilized for flushing purposes, the main objection being the insufficient supply of fresh water, but there appears to be no good reason why salt water could not be employed instead. It will cost money, but all large schemes of this nature are expensive, and can be paid for by a bond issue covering a long term of years so the expense will be borne by future beneficiaries of the work.

We have full confidence that once the traditional red tape of the Crown Colony is cut through, and permission secured from the Government to proceed, our Hongkong neighbours will rise to the occasion and find the ways and means to carry into effect some modern sanitary scheme proposed by a competent committee of investigation.

And now that the seat of British influence in the East has at last shown signs of combating the old tradition that hand removal is the most efficient, perhaps some of the Municipal authorities in the lesser ports under British influence will follow suit. Perhaps even our Shanghai Municipal Council may be awakened to a sense of its obligations to the community it serves to give this grave matter passing notice, though we can readily foresee that in this Model Settlement, many arguments will be advanced, obstacles will be raised and objections insisted on to permit matters to stand as they are, and the old beliefs so thoroughly drilled into a passive community will again prevail.

There are doubtless many good reasons why such a scheme has not been adopted in Shanghai. Chief amongst these is the location of the port and its limitations. The waters of the Whangpoo River below the Settlement are drawn on for the general water supply, which precludes the use of the immediate river as an outlet for a drainage system. Any such scheme would have to provide for an outlet somewhere near Woosung; at once costly and difficult, owing to having to obtain permission from reluctant Chinese authorities. Then again the land is so flat and only a few feet above tide level. But, notwithstanding all the political, engineering and financial difficulties and drawbacks, some scheme could be devised if the proper spirit were manifested in its adoption. The cost must necessarily be great but the community would gladly pay it.

Shanghai is growing rapidly. On all sides handsome modern office buildings and homes are being erected, land is increasing rapidly in value, and the old Chinese rookeries down town are gradually giving way to more substantial edifices. In another ten years the commercial district will extend beyond Honan Road, and it is not difficult to conceive in the mind's eye the gradual spread of the office district westwards, and the future closely built up residential sections of Bubbling Well and the French Concession. And as the port expands, so will the objectionable and malodorous commerce in ordure expand with it. The problem of removal and disposal will every year increase, and the work of removal instead of being confined to the early morning hours will be extended into the day. The removal of sullage and faeces only once in twenty-four hours, and the passage of the night soil carts and buckets through the streets of the city, with the liberation of feculent and dangerous gases, and the contamination of the streets by sloppings and leakages, constitute a grave peril to the health of the community. No argument can refute this statement. Yet this medieval, insanitary and disease-spreading practice is strongly intrenched in Shanghai and defended by the authorities.

We turn for enlightenment on this standing menace to the health and good name of Shanghai, to the Annual Municipal Reports. and we find for the year 1908, that over 77,000 tons of night soil were removed from the Settlements, and the Report naively adds as though in justification of the system, that complaints from the public regarding ordure removal "*continue* to be few in number." Naturally there are few complaints. The long-suffering Shanghai ratepayer has found that to complain is useless, and is compelled to accept the situation. The average ratepayer's opinion is of little weight in the community, because any scheme calling for large expenditures, to be successfully carried through must emanate from the oligarchy of landlords, absentee and present, or their mouthpieces, who are the real rulers of the Model Settlement. And who ever heard of a landlord initiating any movement for the protection of the public health, which will compel him to place in modern sanitary condition the properties rented to the ratepayers? This is, however, another story.

In the Municipal Report for 1911, we read: "The removal of ordure continues to be efficiently done and is a source of considerable profit to the community. The amount paid monthly by the Contractor in the sequence of agreements was in 1899, $3,200, 1902, $4,100, 1905, $5,300, 1908, $6,000, and for 1910, $7,500. There is a ready demand throughout the year for its use in growing such crops as indigo, and were it not *for its employment also in growing market produce for the table, which is practically impossible to prevent*, the method of disposal is more sanitary than any other, and as regards the economy of nature, nearly perfect." So here we have a glowing apology for the continuance of the business and the official assertion that the system is the most sanitary. Whoever wrote the above short item in the 1911 Report certainly deserves the warmest congratulations of the traffickers in the commodity, for it has been accepted as the standard phraseology in succeeding Reports, and has made the policy of the Municipal Board. In the Reports for 1912 and 1913 the identical words are employed, so the gullible ratepayer is lulled into a feeling of false security and convinced that after all there is no escape from medieval insanitation for the Model Settlement of Shanghai.

The authorities admit that the refuse is employed in the fertilizing of market produce for the ratepayer's table, and that it is practically impossible to prevent this. This last is in part true, for the refuse from the Chinese city over which no control can be exercised is also available for the nearby farmer's use. But it would seem to the foreign ratepayer in the Model Settlement, that some effort could be made to minimize the danger to the community as far as it lies within the power of the Municipal authorities. We read, however, in the 1912 Report the following:—"As a result of an offer from a Japanese source of $8,625 monthly for the privilege of removing the Settlement's excrement for the purpose of conversion into chemical manure (ammonium sulphate), tenders were called for some three months before the expiry of the present contract. Keen competition set in, so that 23 tenders were received ranging from $7,570 to $10,050, the highest tender being accepted," and then follows the traditional official apology and the stock statement about its employment in growing market produce for the table, which it is practically impossible to prevent, &c.

The official report itself is evidence of the desire of a Japanese concern to manufacture ammonium sulphate from the refuse, which would render harmless to the public health about 100,000 tons of excrement which is now permitted to fertilize the vegetable gardens of the neighbouring farmers. The danger to the public health would have been decreased by one half at least, always bearing in mind other sources of supply which would be employed by the Chinese. The Japanese concern, whoever they are, ought to have been received as public benefactors, and their tender immediately accepted. But we find that for the sake of a paltry gain of $1,325 (Mexican) per month (£132) to the Municipal treasury, the old established traffickers in the commodity were able to retain their privileges, and the Japanese offer was rejected. The acceptance of the Japanese tender would have materially benefited the community and lessened the ever-present menace to health, yet this protection to the ratepayer was denied. In any other enlightened community questions would have been asked ere now, as to the reasons underlying the rejection of the Japanese offer. The answer, however, is plain. The only consideration which influenced the Municipal authorities having the matter in charge, were sordid financial ones. All they could see was a loss of £132 per month to the public treasury. No consideration of the public health was involved. The thought that perhaps the conversion of 100,000 tons of excrement into harmless commercial manure, would have any effect on the public death rate was apparently ignored. This callous disregard for the health of the ratepayer, for the sake of a paltry £132 per month could never have occurred in any other community. Leaving aside the ethics of the relation between the ratepayers and their servants, and viewed solely as a cold blooded municipal business proposition, it never seemed to occur to anyone that perhaps the $1,325 per month lost to the treasury in the malodorous traffic, might have been saved in the expenses of the sanitary department. But no, the Shanghai authorities have complacently adopted the old Chinese custom unreservedly, and are apparently concerned only as to the increase the traffic will add to the revenues. They deliberately threw away an excellent opportunity to protect the health of the community and provide an object lesson for other treaty ports and Chinese cities. The authorities are fully aware of the ultimate destination of the Settlement's night soil, and that it is returned to the Ratepayer on his market produce. As it cannot be prevented by the Municipal Officials, therefore the Ratepayer must look to himself. All that the authorities can do to protect the public health is to warn the Ratepayers through the Reports of the Sanitary Officer of the exact state of affairs, and devise rules of health for the householder to follow. Sterilize all food is the only safeguard, but this warning is constantly disregarded and the Ratepayer pays the price.

"When one recalls to memory the ghostly procession that yearly departs this life in Shanghai or goes home physically wrecked from these causes, it is extraordinary that more attention is not given to this important matter by the public generally." So says the Health Officer is his last Annual Report. He also says that "vegetables and fruit grown near the ground, being watered as a rule with night soil, are especially liable to be soiled with the germs of Typhoid Fever, Cholera, Dysentery and other bowel diseases," and that preventive measures are almost entirely in the hands of the householder, who is warned to thoroughly sterilize all food.

But when the care of our kitchens and the preparation of our food is largely in the hands of native servants, and where it is impossible in many cases for the foreigner to exercise personal supervision over these affairs, the inevitable result follows and sooner or later another beloved member of the community joins that ghostly procession which passes into the unknown from Shanghai.

There is no possible justification for further expansion of this traffic in Shanghai. The first step to be done is to follow the lead of Hongkong, and employ the services of the best drainage expert in the world, to make a report on the adoption of some

system of sanitation to meet the peculiar requirements of a great and growing commercial metropolis like Shanghai. Then whatever the cost, let the Ratepayers decide. If there are insurmountable engineering problems, and a better system cannot be adopted, then approach the Japanese concern and accept their offer, and invite the Chinese authorities of the Native City to do likewise.

In conclusion we again quote the significant words of our esteemed Health Officer: "When one recalls to memory the ghostly procession that yearly departs this life in Shanghai, or goes home physically wrecked from these causes," *and we add*, it is extraordinary that more attention is not given to this important matter by the *servants of the Ratepayers*, and steps taken which will abolish or at least minimize the constant peril to which the community is subjected through the continuance of the night soil traffic with the Chinese.

ASPHALT FROM THE PHILIPPINES

The discovery of a vein of asphalt of high quality and of large extent in the Philippine Islands is likely to have a marked influence upon the paving of cities in the Far East and upon other lines of building and contracting work. The vein has been discovered by a Government forester who took an outcrop of the vein on a hillside for coal. The deposit lies in the Leyte Province, barrio of Campopoc, on the northwest peninsula of the island about 10 miles from the ocean. The vein discovered runs about a yard and a half thick and can readily be traced about 160 yards along the side of the hill, several thousand tons of the material being actually in sight with indications that the deposit is of much greater scope. The analysis of the deposit made in Europe shows that it is of a quality suitable for the highest uses and ought to bring the highest prices. The discoverers of the vein are already using the material for roofing and similar purposes. Emanations of an oily nature in the country near the deposit have been noticed for many years and were supposed to indicate oil.

PROSPECTIVE BENEFITS

The successful application of this Philippine asphalt to paving and similar work will be of the highest importance, both to the Philippines and to other portions of the East. At present asphalt for paving, roofing, and other purposes is imported from Europe and the United States at high cost, the result being not only high priced pavements but a minimum of high grade material in construction of such pavements.

The Far East is just commencing to turn to modern pavements generally, and the use of asphalt heretofore has been quite limited. In Hongkong where, by reason of its peculiar location and the nature of its topography, road building has received particularly careful attention and has been the subject of considerable experimentation, little has been done in the use of asphalt until comparatively recently and the change has been due to the increasing use of motor cars and heavy traffic vehicles instead of the chairs and jinrickshas, which heretofore have made the use of macadam and of concrete and cement practicable. On the less frequently used roads and on the higher levels a concrete mixture of broken stone, a peculiar sticky Chinese clay and lime has usually been employed. As a result of the heavier demand upon the roads of the lower levels by motorcar traffic the need of a heavier binder for the broken stone has been seen and most of the better class pavements now being laid are of broken stone laid in asphalt or in tar.

The supply of asphalt in the Far East at present is coming largely from the west coast of the United States and the trade is increasing. Pavement grades of asphalt at present in Hongkong cost around $35 gold per ton, other grades running as high as $75 gold per ton, delivered in Hongkong in either case. In Hongkong little compressed asphalt has been used so far and that used has been imported through the Crown agents in London. Tar macadam is the chief pavement employed at present, but government engineers report that they expect to employ more compressed asphalt in the future.

THE PRITCHARD MORGAN CONCESSION

The London correspondent of the *Glasgow Herald* writing on August 5 says:—When the announcement was recently made that the Eastern Pioneer Company had secured from the Chinese Government an acknowledgment of what is known as the old Pritchard Morgan Claim in Szechuan, it was immediately followed by a message from Peking throwing doubt on the truth of the statement. I learn that the Foreign Office has now received information that the concession has been finally approved by President Yuan Shih-Kai. The President admits the validity of all contracts entered into by the Manchu Government, of which the charter granted to Pritchard Morgan in 1899 was one. The amended charter gives the British group the exclusive right of working in conjunction with the Chinese the vast oil resources of Szechuan, together with the mineral and industrial resources of the province, which is generally believed to be the richest in China. The grant of this concession means a great deal to British interests in the East. It means among other things that the province of Szechuan has passed to Great Britain. The very size of the concession made it appear hopeless to think that China ever seriously thought of granting it. The President's recognition of the claim, however, means that at one stroke Great Britain has secured practical control of the province, with its population of 60,000,000 and what is believed to be by far the richest agricultural, mining, and timber lands in the vast and rich territory of China.

STREET PAVING IN JAPANESE CITIES

By Consul General George H. Scidmore, Yokohama.

Modern street paving is as yet practically unknown throughout Japan The usual Japanese street has no sidewalk pavements, and no attempts have been made to provide separate roadways for pedestrians outside the business districts of the more important cities. These streets have no artificial pavings, they are usually macadamized in as cheap a way as possible, and are shockingly bad at all times of the year in the congested traffic districts. In the city of Tokyo, population some 2,000,000, there is only one steam roller employed on these pavings, and that is usually out of order.

In Yokohama a few of the business streets have cement sidewalks, but none of the streets are paved. Yokohama has a population of about 400,000 and street mileage about equal to that of any city of like population in the United States.

IMPROVEMENTS IN THE CAPITAL CITY

A few experiments in street paving have been carried on in Tokyo under supervision of the city authorities, but only a scant 3 miles have so far been paved, and this paving has been done with wooden blocks coated with a very thin covering of asphalt. The streets so paved are already showing signs of hard wear.

The main business street of Tokyo, the Ginza-dori, the Broadway of Japan, has cement sidewalks on both sides of the main roadway. The Ginza is a broad street and has a large traffic. The laying of cement sidewalks in Tokyo is gradually being extended and will undoubtedly be greatly augmented as the plan for widening the streets of the capital is gradually carried out. The rapid increase in traffic of all kinds, especially motor traffic, is playing havoc with the roadways, and the necessity for more durable pavings is becoming more and more apparent to the authorities. All the streets now paved with cement have cement curbings. I know of no residence streets paved, and few of them have special roadways for pedestrians.

POSSIBLE CONTRACTS—MUNICIPAL BONDS

There would be no prejudice on the part of the Japanese against an American corporation seeking street-paving contracts in Japan.

It is not absolutely necessary but it is always of advantage to a salesman who approaches Japanese officials if he is conversant with the Japanese language and has some knowledge of the intricacies of Japanese etiquette, which form so large a part of all Japanese social and business intercourse.

Municipal securities to cover municipal improvements are not issued by the Japanese municipalities without the approval of the Imperial Government. There are no securities as yet on the market for such purposes as street improvements. The city of Tokyo has at present a bond issue under contemplation for raising funds to install a modern sewer system, but this matter is as yet in abeyance. Should the large cities of the country, the centers of commercial enterprise, at any time see fit to undertake any extensive plan of street improvements they could doubtless stand the strain on their financial resources imposed by the undertaking.

The supply of materials, such as stone and sand, is easily obtainable in Japan. Hard rock is scarce, but gravel can be had in abundance throughout Japan.

PUBLIC WORKS AT KOBE—GENERAL SITUATION

Japanese cities are very backward with respect to municipal improvements as compared with American cities. There will be a large field in this direction some of these days, however, for American enterprise. There is no city in Japan with a sewage system and none that I know of in which the streets are lighted or paved. Just now the city of Kobe is engaged in two large works, the harbor works and waterworks, which have been lagging considerably for lack of funds. No city can undertake anything of this kind without the permission of the Central Government at Tokyo.

The incidence of taxation in Japan is very high while the wealth per capita is very low, and the Government at Tokyo has been making strenuous efforts at retrenchment in order to relieve the strain and adjust the finances. There is in this consular district one city of 1,250,000 inhabitants, three of about 450,000, and numerous smaller ones, so that when the time is judged favorable there will be a very large amount of this kind of work undertaken. I should advise Americans who are interested in these various lines to keep in touch with the general financial situation in Japan.

With regard to city roads, there are no curbs outside of the foreign concession, and they are only repaired with shingle from the seashore. This answers the purpose, after a fashion, as there is no heavy wheeled traffic, and consequently the need for pavement is not very pressing. One firm in Kobe laid down at its own expense a short strip of asphalt paving as an experiment, which induced the city to pave in this way the principal shopping street for a short way, and the tramway company has put down granite blocks in one particularly busy street.

THE PANAMA-PACIFIC INTERNATIONAL EXHIBITION

NOT AFFECTED BY EUROPEAN WAR

Special correspondence from San Francisco states:—Early in August in response to inquiries from all parts of the globe, the management of the Panama-Pacific International Exposition announced that the exposition would not be postponed. The development of events since that time, in their relation to the exposition, tends to confirm the wisdom of that original decision. When the decision was made no word had been received from any European nation as to what effect the European war would have upon its plans. In the last six weeks, however, it has become evident that many European nations will be represented at San Francisco.

So rapid has been the progress in the construction of the city of foreign government pavilions and palaces to the west and south of the Palace of Fine Arts during the first six weeks of the European war that each of them appears to be making an extra effort to surpass its neighbors. Of the 40 foreign governments which have committed themselves to participate, not one has withdrawn. On the contrary many have applied for more exhibit space and some have greatly increased their appropriations. Spain, France, Italy, Holland, Japan, China, Sweden, and other nations in the war zone have officially notified the exposition that they will proceed with their buildings or exhibits despite the war.

CONSTRUCTION PROGRESSING RAPIDLY.

The beautiful pavilions of Sweden, Bolivia, the Philippine Islands and Cuba are from 80 to 90 per cent. completed. Those of Honduras and Canada—the latter a huge structure to be filled wholly with displays from Canada and moving picture halls—are finished. The German Kali Syndicate building, constructed in part by the German government, is more than half finished, as is the Holland pavilion, which is set in a large garden. The huge Chinese building, as well as the two mosque-like buildings of the Ottoman Empire, are nearly half completed. The three government buildings of Japan, to be set in a four acre garden, are being built in Japan, to be sent "knocked down" and erected between the palaces of Cuba, Denmark and France, one of them being an ancient temple. Australia and New Zealand are rushing their buildings, which are over 25% completed. The Chilian and Peruvian buildings will flank that of New Zealand, while Italy, Brazil and Argentina surround Turkey on three sides.

LARGE FUNDS FOR PARTICIPATION

Within ten days after the war broke out Holland had increased its appropriation from $100,000 to $400,000 and ordered that construction be rushed upon the great Netherlands pavilion, immediately adjoining the Palace of Fine Arts.

The Persian display has been assembled at Teheran and is ready for shipment. Spain, which had not decided to participate officially before the war has since voted an initial fund, $100,000, for participation.

England, Germany and Austria will be represented by individual exhibitors or by associations of exhibitors. Norway is proceeding actively with her plans and Denmark broke ground for her pavilion the first week in September. The Argentine Republic, in view of the new trade alignments between the American continents, has increased its appropriation from $1,250,000 to $1,750,000; Italy has ordered construction rushed upon her great pavilion. Since the war broke out important publications in France have written the exposition for illustrations and data.

The Grand Duchy of Luxemburg despite the war has prepared and shipped a marvelous exhibit of unnamed roses to compete for the $1,000 prize for the Panama-Pacific International Exposition Rose. The Netherlands for its great government horticultural exhibit has asked for and has been granted 52,000 square feet of space and the plants are being assembled in seven different cities in Holland under the supervision of government experts. Japan has asked for 8,000 additional square feet of exhibit space for her horticultural exhibit, making altogether in the competitive horticultural exhibit a total of 12,000 square feet. This in addition to a four acre garden. Japan will be represented upon a vast scale in all the exhibit palaces. Cuba has asked for additional space and is making elaborate arrangements for her $250,000 display.

France cabled that her plans are unchanged. Aside from the action of the French Exposition Commission the Athletic Department of the exposition has received word from France that there will be a representation in the athletic events. Undoubtedly some of the entries on the athletic sports program will not be made and some of the art treasures intended for the Palace of Fine Arts will not be shown at San Francisco because of the war, but not by any means the majority or the most important of them, and there are many factors in the situation which will more than compensate for these losses.

Since the war broke out there has been a very sharp increase in the demand for exhibit space from the manufacturers of the United States, South America and the European nations not at war.

While there is now no doubt that many European nations will be represented at the exposition, it is apparent that in addition, there will be an unprecedented representation from South America and the Orient, as well as from Central America.

The exposition has become very important in an extraordinary economic situation. Manufacturers and exhibitors from South America and the Orient are preparing for a liberal representation. Cochin-China, Indo-China and Siam, the Philippines and many of the states of India and South Africa are beginning their preparations.

In regard to attendance traffic managers are of the opinion that the European war is likely to increase travel to California in 1915 rather than to reduce it.

SHIPBUILDING IN JAPAN

This year's operations of Japanese shipbuilding yards are beating all records. In 1912 and 1913, when the prosperity of the freight market reached its height, a large number of orders for ships were placed with different yards. The tendency was the same all over the world. In England the yards could not meet the increasing orders.

In Japan the demand was not so much in excess over the supply, but the increased orders have kept the different yards busy during 1914. There will be launched in Japan this year 17 vessels, with a total of 86,000 tons. The large additions to the mercantile fleet at a time when the market is so depressed are regarded with some apprehension.

SUGAR IN THE PHILIPPINES

The report of the San Carlos Milling Co. shows that the company's plant obtained during the year just closed 8,000 tons of sugar from approximately 5,000 acres. The land is owned by nine planters, seven of whom entered into contract with the company in advance to mill their cane, the two other planters coming in later in the year. This mill was built between July and December, 1913. It covers 20 acres, with the homes of the employees grouped about it. The supervisors are one American, one Japanese, and two Filipinos. The total force consists of 15 Americans, 200 Filipinos, and 7 Japanese.

The Seoul-Gensan Railway was formally opened on September 6. Its construction was begun during the late war but suspended until October, 1910, since which time the work has been carried on with vigour. The railway crosses the peninsula from east to west and is 141 miles in length.

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A LESSON OF THE WAR FOR AMERICANS AND FILIPINOS

To dwellers in the Far East, whose future prosperity and well being is linked with the progress of the countries wherein we reside and conduct our business, the Great War in Europe has emphasized the truth, that so long as the integrity and neutrality of weaker states is dependent on treaties and conventions, there can be no assurance of peace or protection against violent aggressions. The European war teaches us that neutrality treaties, or independence guarantees are not worth the paper they are written on, and are binding only on the weaker side. When the great armed Powers of the world consider that their interests demand it, and decide that the hour to strike has sounded, then treaties, conventions, understandings, and other solemn diplomatic contracts entered into with weak and defenseless governments, become simply waste paper, and no longer binding. The war has emphasized in no uncertain manner the expression of opinion on the "Philippine Problem" published in the October, 1913, issue of this paper. Our Filipino friends ridiculed the idea that they would not be safe under the protection of similar treaties which guaranteed to Belgium, Switzerland and Luxembourg their independence, and our remarks were construed as only another argument of a rabid American imperialist desirous of maintaining American control of the Islands, in violation of our pledged word.

For years a campaign of calumny and misrepresentation against the Americans has been openly waged by those Filipino politicians clamoring for Immediate Independence. Their cry has been heard at home by the anti-Imperialists, and answered by the National Democratic Party making it a political issue. For sixteen years the cry for Filipino Independence has unsettled American national politics, and acted as an obstacle to the development of the Islands. For many years a certain section of the Democratic party has demanded immediate withdrawal from the Islands, and if wiser and cooler counsels had not prevailed, the Islands to-day would have been staggering along under a feeble and impoverished native Government headed by politicians whose greatest ambition is to secure control of the finances and patronage of the Government.

We trust that the lesson of the war in Europe has struck home to those who have been loudest in condemning the policy of the American Government as expressed by the Republican administrations. The strong-armed attempt on the part of Austria to seize little Servia, as she had already annexed Bosnia and Herzegovina in violation of the provisions of the Belgian Congress; the brutal and cold-blooded violation of the neutrality treaties by Germany in respect to Belgium and Luxembourg; the arbitrary use of the Chinese Government Railways by Germany, for the transport of troops and war materials to strengthen Tsingtau, which in turn is employed as a reason by Japan in disregarding Chinese protests against a further violation of her neutrality; these and other incidents all point to only one great moral, and strengthen our previous remarks on the worthlessness of neutrality treaties and the hopelessness of weak nations relying on the honour of the stronger, when the interests of the latter are at stake.

Americans should be the first to take the lesson to heart, and commence at once to modify the present Democratic policy concerning the future disposition of the Philippine Islands. The provisions of the Democratic National Platform adopted at Baltimore, July 2, 1912, and now being carried into effect by President Wilson and Governor General Harrison, favor an immediate declaration of the Nation's purpose to recognize the independence of the Philippine Islands as soon as a stable government can be established, **such independence to be guaranteed by us until the neutralization of the Islands can be secured by treaty with other Powers.**

If it were not tragic, it would be to laugh. Such implicit, child-like confidence in the good intentions of the great military Powers of the world, indicates how little American politicians are informed as to the diplomatic undercurrents and trend of events in the Far East. As we pointed out a year ago, all the neutrality treaties in the world could not save the

Philippines from being acquired by some strong Power, within a few months after the American flag had been hauled down and the army transported back to America.

Yet, in deference to the peace proclivities of the Secretary of State and a firm desire on the part of President Wilson to stand loyally by his platform pledges responding to the wails of the Joneses and the little feeble hearted Americans allied with the anti-Imperialists; ignoring all the warnings which other American political leaders and statesmen have raised, the Democratic administration has persisted in its well meaning but mistaken policy of hastening the day of Filipino independence, and cutting the Islands adrift in the stormy seas of Far Eastern diplomacy, under the sole protection of a string of neutrality treaties with the other Powers.

How long would their independence have lasted if it had been conceded prior to August 1st. last of this year?

If the Democratic program could have been expeditiously carried out to suit the idea of Jones of Virginia and his friends, and the Islands had been cut adrift at ten o'clock on Wednesday morning or on any old day prior to August first, and safely established as a going republic under the proposed benevolent neutrality treaties, what flag would be flying over the Luneta in this month of October ?

There is little to be gained in idle speculation as to the nationality of the war ships which would have been the first to arrive in Manila Bay. Any one of the great Powers now at war with each other, could conveniently justify their seizure or occupation of the Islands at this time, especially Germany, who on one historical occasion manifested a strong desire for their occupation. If not Germany, then Great Britain, France or Japan would have felt justified in swooping down and seizing the Islands, to prevent them being used as a base by the German war ships. And as Belgium, Luxembourg and poor old China have relied for their safety and security on a piece of paper, and have not the physical force to protect their integrity and neutrality, so the feeble and peaceable Filipino Republic within a few weeks after the outbreak of war, would have been seized, and occupied by some strong Power acting under the peculiar code of international morality which justifies such an outrage as necessary for its self-preservation.

The Democratic leaders and their anti-Imperialistic allies at home together with the Filipino politicos and all the Immediate Independence party, should get down on their knees and give thanks to the Almighty that the whirlwind campaign to give immediate independence to the Islands has been providentially delayed, and that the protecting flag of America still floats over Corregidor. If it had been lowered any time last year as so many prominent Democrats ardently desired, what would be the position of the United States to-day? Could we have bowed to the will of our "peace at any price" Secretary of State and remained indifferent to the fate of our Filipino protegé after so many years of sacrifice and labor and still have preserved our national honor? Would not the violation of Philippine neutrality have compelled us to dispatch a portion of our fleet to enforce the provisions of the treaties, and enter into hostilities with any Power who had occupied the Islands?

America has escaped this for the present, with no thanks to the Joneses and the Filipino demagogues, but just so sure as the present Democratic policy is adhered to, just so sure will America some day be forced to follow Britain's lead in maintaining by force of arms, the honour of her treaty obligations in respect to the Philippines. If this lesson of the great war is learned by Americans and Filipinos, and taken to heart, the Philippine problem will soon be solved. The American flag is the only safe guarantee for a permanent and peaceful government in the Philippines. This in turn holds good just so long as America has the power to enforce respect, and the spirit to exert this power when occasion demands. If the flag is once hauled down, and the little Island Republic cut adrift, with only its waste paper guarantees for protection, it will only be a question of time when America would be compelled to return and defend its protegé from the rapacity of some other power. We commend these thoughts to those editors of the Filipino and Katipunan Press who for years have carried on a seditious campaign under the noses of the good natured American authorities in Manila, and who have persisted in casting discredit on the work of their benefactors. Instead of the usual beauty and other contests for increasing circulation, let the following question sink deep in the minds of your readers in the form of a guessing contest. What flag would now be flying over the Island if independence had been secured two years ago, last year, or any time prior to August 1st? It would be curious and enlightening for the Americans to know just what the popular opinion of the Filipinos is as regards this interesting subject. We commend it also to the Joneses and the Democratic leaders in Washington. Ponder over it, and the more you ponder, the more will it be brought home, that to abandon the Philippines with only the safeguard of a worthless paper neutrality is simply to invite, well not to be explicit, let us say Patagonia or some other country of equal importance, to step in and undertake the responsibility which America shirked.

JAPAN AND THE SHANTUNG RAILWAY

The railway built by a German Company between Tsingtau and Tsinanfu, the capital of the province of Shantung, has been the bone of much contention between the Japanese and Chinese during the past month, and in the future is likely largely to figure in discussions relative to a settlement of the question of the eventual fate of the leased territory of Kiaochow. The investment of Tsingtau by the Japanese and British troops led naturally to a desire on the part of the Japanese to control such a vital means of communication with the capital of the province as was afforded by this railway; and the fact that it was the enemy's property and had been used by the enemy to transport munitions of war and men to the fortress gave them a certain amount of justification for over-riding the objections of the Chinese against occupation. China claimed from the outset that the railway was not German property under the domination of the State. She argued that it was the property of a private company in which Chinese were shareholders, and, therefore, could not be considered a prize of war, but her arguments were in vain. The Japanese had determined to occupy the line as a military necessity, and when protests began to rain upon her defended her action on the following grounds—which were set down in a Note from the Japanese Legation to the Chinese Government.

"The Shantung Railway concession was based on the concession granted to the German Government in the Kiaochow Convention of 1898. It is entirely and purely a German Company, possessing the nature of public property under direct control of the German Government, and is in reality a part of the Leased Territory, being an extension of it. According to the Company's Articles of Association and the Charter of the German Government under which it is worked, it is proved that it is a German Company. The above facts are indisputable. In view of the manner in which the railway is working it is impossible for it to be divided up, and the fact that a section of the line running to the west of Weihsien lies within neutral territory, cannot alter the original status of the railway, which still remains German. The Japanese Imperial Government having in view the complete demolition of the enemy's base at Tsingtau, in pursuance of the declaration of war against Germany, is quite justified in taking possession of the railway as it constitutes an indivisable part of the Leased Territory of Kiaochow. This can be accomplished without the matter being referred to the Chinese Government, but to avoid any misunderstanding and to avoid any chance of conflict with the local authorities, the Imperial Japanese Government has acquainted the Chinese Government of her intentions, and requests that China make such arrangements as will allow this to be done without further delay."

In explaining her views regarding the railway Japan pointed out that "The Shantung Railway cannot be regarded as neutral, and Japan's action in taking possession of it does not amount to a violation of China's neutrality. The proclamation of the Chinese Government defining the war zone does not in any way

alter the nature of this Railway's special status. The question of the war zone and the standing of the Shantung Railway are two separate problems and of a different nature. It was insisted by the Chinese Government that there is now no actual connection between Tsingtau and the railway line, owing to the investment of that place by Japanese military forces, and that there is no opportunity on the part of Germany to utilise the railway. But viewed from a Japanese military standpoint, governed by the situation in Shantung, it would indeed be very dangerous to leave in the hands of the enemy the section of the Railway west of Weihsien—just in the rear of the Japanese forces. It would be strategically impossible to permit such a thing. Examples are not lacking that the Chinese Government could not restrain the Germans from utilising the railway for warlike preparations and operations."

Upon these reasons Japan pursued her policy of establishing military guards along the railway as far as Tsinanfu, and installing a staff of trained railway men transferred from, it is stated, the South Manchurian railway system; and China has acquiesced in the occupation only under the strongest protest. The insistence by Japan of her right to occupy this railway caused considerable alarm in Chinese circles, and a certain amount of agitation was developed which culminated in members of the State Council at Peking interpellating the Government as to its policy regarding Shantung and the so-called "Japanese invasion." High officials, however, kept their heads, and paid no heed to the jingoistic utterances of some of the military representatives in the Council. The President and his immediate supporters all recognised the futility of resisting by force the violation of China's neutrality. They have painful knowledge that the Exchequer is empty of funds, and that the army is neither large enough nor equipped well enough even to hope to cope successfully with the force which the Japanese could employ by land, to say nothing of the possible operations from the sea; and for those reasons Chinese agitators wasted their breath in vain. The Government decided upon its line of policy immediately the European war showed signs of affecting this quarter of the globe, and that policy was simply to suffer "the slings and arrows of outrageous fortune;" to protest against any encroachment upon China's neutrality, and to trust in justice being done at the end of the war. Moreover the Government is willing for the time being to give Japan the benefit of the doubt by trusting that she really means to stand by her undertaking to respect the integrity of China. The Chinese man in the street thinks contrariwise. He holds the opinion that Japan has come into the province of Shantung to see and to conquer—and thence to spread what he calls "the continental policy." Only the future can tell whether there is wisdom in the man in the street of China, but it is only fair that Japan should at the moment be credited with the highest and best motives in her actions in Shantung.

The rights under which Germany built her fortress at Tsingtau and constructed the railway from Tsingtau to Tsinanfu were embodied in the Convention signed at Peking on March 6, 1898. The Chinese Emperor then engaged, while reserving all rights of sovereignty in a zone of 50 kilometres (100 Chinese li) surrounding the bay of Kiaochow at high-water, to permit the free passage of German troops within this zone at any time, and also agreed to abstain from issuing any Ordinances therein without the previous consent of the German Government. At the same time, "with the intention of meeting the legitimate desire of His Majesty the German Emperor, that Germany, like other powers, should hold a place on the Chinese coast for the repair and equipment of her ships, for the storage of materials and provisions for the same, and for other arrangements connected therewith, His Majesty the Emperor of China cedes to Germany on lease, provisionally for ninety-nine years, both sides of the entrance of the Bay of Kiaochow. Germany engages to construct, at a suitable moment, on the territory thus ceded, fortifications for the protection of the buildings to be constructed there and of the entrance to the harbour."

In Sections 2 and 3 of the Convention the Chinese Government sanctioned "the construction by Germany of two lines of railway in Shantung, the first to run from Kiaochow to Tsinanfu and to the boundary of Shantung Province, via Weihsien, Tsinchow, Pashan, Tsechuen and Suiping; and the second to connect Kiaochow with Chinchow, whence an extension will be constructed to Tsinan through Laiwuhsien." It was stipulated that a Chino-German Company should be formed to carry out this work; the profits derived from the working of the railways to be "justly divided pro rata between the shareholders without regard to nationality."

In addition to these specific railway rights—which were enlarged by an agreement signed at the end of 1913, and a further agreement signed on June 24, 1914,—the Chinese Government agreed to German subjects holding and developing mining property for a distance of 30 li from each side of the railways and along the whole extent of the lines, but these rights were subsequently modified when the extension of the railway agreement was negotiated. Germany, however, had the dominant voice in the province of Shantung with regard to the employment of foreign capital, the Convention setting out:—"The Chinese Government binds itself in all cases where foreign assistance in persons, capital or material, may be needed for any purpose whatever within the province of Shantung, to offer the said work or supplying of materials in the first instance to German manufacturers and merchants engaged in undertakings of the kind in question. In case German manufacturers and merchants are not inclined to undertake the performance of such works or the furnishing of materials, China shall then be at liberty to act as she pleases.

In pursuance of this Convention the German Government granted to a German Company known as the Schantung-Eisenbahn-Gesellschaft a Charter dated June 1, 1899, for the construction and operation of a railway from Tsingtau to Tsinanfu. The Charter stipulated that "the construction and maintenance of the railway shall be proceeded with by a German-Chinese Company," the management of the railway to be domiciled in Tsingtau, and the completion and opening of the line from Tsingtau to Tsinanfu to follow within a period of five years. German material was to be used as far as possible in the construction and equipment of the railway. It was stipulated that the company "shall pay a contribution from the yearly net profits of the railway to be applied to the expenditure of the Government for the harbor works in the Bay of Kaiochow and also to the general running expenses of the Protectorate," such contributions to be "the twentieth part of any surplus over 5 to 7 per cent., the tenth part of any surplus over 7 to 8 per cent., the fifth part of any surplus over 8 to 10 per cent. the third part of any surplus over 10 to 12 per cent., and the half of any surplus over 12 per cent." The German Government reserved the right to purchase the railway after the end of sixty years."

In addition to the railway from Tsingtau to Tsinanfu, the only one so far constructed, the Germans recently concluded an agreement with the Chinese Government whereby a line was to be built connecting Tsingtau with Hsuchowfu, on the Tientsin-Pukow railway, and another line extending from the Yellow River near Tsinanfu, to a point to be decided by survey on the Peking-Hankow railway. To this agreement no effect has been given, and what will become of it in the future remains to be seen. In the meantime the contention between Japan and China is confined to the Tsingtau-Tsinanfu line, the situation at the moment being that Japan has control of it under protest from China. Japan will no doubt operate the railway as efficiently as the South Manchurian railway is operated, and the bridges which were blown up by German employees of the line before their departure will soon be rebuilt and a restoration of traffic effected. Hitherto the administration of the railway was in the hands of the Germans, and by its temporary transference to the Japanese China actually loses nothing—except a little "face."

RUSSIAN RAILWAY PROJECTS

The acquirement from China by Russia of the right to construct a railway from Blagoveshchensk, on the left bank of the Amur River, to Aigun, Mergen, and Harbin, with a connection between Mergen and Tsitsihar, is of great importance politically to Russia and commercially to North Manchuria.

Commercially it taps large and rich tracts of territory and gives immediate access to the Amur River and to the New Amur railway now being opened on the left of the river, and with which Blagoveshchensk is connected. Politically it binds this region to Russia, and gives her at least railway dominance over the whole of North Manchuria. She now has the railway from Vladivostok through Manchuria and on to Russia, and has nearing completion the railway traversing her own territory from Vladivostok north of the Amur to Karimska, where it junctions with the Siberian railway. The railways she has now secured the right to build will permit her to place the important centre of Harbin, with its direct connection southwards, in immediate touch with trade avenues which will tap the large and it is reported resourceful territory of the Amur. Above all it places in the hands of Russia what is the northern section of the projected railway from Chinchow to Aigun, about which there was so much pother some years ago. Americans hold the right from China to build the Chinchow-Aigun railway, but in recent times the southern half of it, or practically the southern half of it, has been granted to Japan by China, and now Russia has obtained the right to cover the northern section. This seems to be tantamount to the theft of a man's clothes while he is asleep in the sun after a bathe—though it is folly for any man to risk sleeping under such conditions without keeping a taut string on his habiliments.

EXTENSION OF SHANGHAI SETTLEMENT

It is stated that at last an agreement has been arrived at in reference to the extension of the existing boundaries of the foreign Settlement of Shanghai. This matter was under discussion before the Revolution and several tentative efforts were made subsequently, without success, to reach some satisfactory understanding. One circumstance which has no doubt had considerable influence in preventing an earlier settlement of the question has been the constant change of officials who occupied the position of Commissioner for Foreign Affairs in Shanghai. The first occupant of the post after the Revolution was Mr. Wen Tsung-yao, who resigned after a few months. Mr. Ivan Chen, who succeeded him, was making satisfactory progress with the negotiations when he was sent on a mission to India in connection with the Tibetan question. Next came Dr. Chang, but he had hardly time to familiarise himself with the conditions at Shanghai before he was transferred to Wuhu. His successor was Mr. Yang Tcheng, and the appointment of an official of Mr. Yang's standing and experience, coupled with the fact that he was given the title of Special Envoy for Foreign Affairs, suggested that there would be some prospect of a termination of the negotiations which had been dragging on so long. These hopes have been realized, although it has taken a long time for matters to reach finality. We have authority for stating that a decision would probably have been arrived at earlier had it not been for the war, which moreover will prevent any actual transfer of the new territory until the conclusion of peace.

Although no official announcement has been made in regard to the area of the territory which will come under the influence of the Municipal Council, it is known that it is extensive. In the north-west the new boundary will be the Shanghai-Nanking Railway line, but the station and railway property will remain under the jurisdiction of the Chinese authorities. The selection of the railway as a boundary is certainly to be commended, as it provides a definite dividing line instead of the nebulous imaginary boundary that has, in the past, been so provocative of friction between the foreign and Chinese authorities. One of the arguments advanced by the Shanghai Municipal Council to support their claim for extension was that it was difficult to ensure satisfactory health conditions when insanitary dwellings were allowed to exist on the Chinese side of the boundary.

ECONOMIC PROGRESS IN JAPAN

The Financial and Economic Annual of Japan for 1914, issued by the Japanese Department of Finance, maintains the high level of excellence attained in previous years. In passing the hope may be expressed that the time is approaching when the Government of China will be able to present an equally comprehensive and authoritative report of the financial and economic activities of the Republic. Japan early recognised that it was of primary importance that trustworthy statistics showing the development of the country should be prepared and published, not only in Japanese, but in English, so as to make them available to the foreign elements which have a direct interest in Japan as subscribers to her loans. This necessity also exists in China, but hitherto it has been found impossible even to collect the statistics. There is some hope that, with a more settled condition of affairs, this unfortunate state of things will be rectified.

The general budget of Japan for the financial year 1913-14 called for a revenue and expenditure of Y586,807,588 (£60,105,253), but a supplementary budget brought this total up to Y594,416,770 (£60,884,643). The Government, however, decided to effect retrenchment in expenditures and to postpone undertakings, and a revised budget was prepared showing a total revenue of Y591,959,538 (£60,632,955) and a total expenditure of Y563,071,049 (£57,673,978), leaving a surplus of Y28,888,489 (£2,958,977). In the financial year 1912-13 there was an increase of Y38,000,000 (£3,892,246) in the ordinary section of the revenue as compared to the estimate, mainly due to increased revenue from Customs duties, income tax and sake tax. There were also increases in the stamp duties and in the receipts from Government undertakings and state property, mainly due to increased profits of the monopoly bureau and the steel foundry. The total increase in the ordinary section as compared to the estimates was Y49,480,000 (£5,068,114). In the extraordinary section there was a total increase of revenue of Y55,860,000 (£5,721,602). Thus the total revenue, ordinary and extraordinary, amounted to Y687,390,000 (£70,407,662) against the estimate of Y582,040,000 (£59,616,921), an excess of Y105,350,000 (£10,790,741).

In 1913-14 it is anticipated that there will be an excess in the ordinary section of revenue of Y42,000,000 (£4,301,956) and in the extraordinary section of Y85,000,000 (£8,706,340), mainly due to an increase in the surplus brought from the preceding year. The total revenue for the year, ordinary and extraordinary, will therefore be Y722,000,000 (£73,952,678), an excess of Y128,-000,000 (£13,110,724) over the estimate. Although Y42,000,000 is given as the increase in ordinary revenue, there has to be a rectification, as there has been an increase of Y2,200,000 (£225,341) owing to administrative readjustment, and a decrease of Y9,000,000 (£921,843) as a result of the readjustment of the tax system. The total natural increase in the ordinary revenue would be Y49,000,000 (£5,018,949). As there was always a large surplus in the National Treasury the amount of treasury bills issued during the year was insignificant.

Turning to the economic side the first half of 1913 saw the issue in British and French markets of railway bills to the value of £1,500,000, railway notes of the same amount and exchequer bonds for Fcs. 200,000,000. With this foreign capital short-term railway bills to the value of Y65,000,000 (£6,657,790), which had been issued to meet railway expenses and other loans were redeemed. In June a general administrative reform was carried out, which was to produce a surplus of Y66,000,000 (£6,760,217) during the same financial year. Consequently during the second half year a steady improvement of the National Treasury began to set in and the Treasury bills which had been issued to the amount of Y35,000,000 (£3,584,964) during the first half year fell to Y20,000,000 (£2,048,551).

This reduction and the redemption of the short-term railway bills already referred to almost cleared away the short-term Government securities to the value of Y95,000,000 (£9,730,616). This facilitated the finding of capital in the economic world, but there was an increased demand for capital. This was due to the steady progress in organising new enterprises and expanding old ones; to the requirement of capital for settling the balance of foreign trade in which there had been an excess of imports to the value of Y90,000,000 (£9,218,478) in 1912 and 1913, and to the indirect effect of the tightening of the European money markets in consequence of the Balkan troubles. As a result of the increased demand for capital, the money market increased in

tightness with the exception of the changes in the rates of short-term interest. Deposits made in the banks at the principal trade centres of the country increased by Y39,000,000 (£3,994,674), which was no more than half the amount in the preceding year; the postal savings instead of the steady increase hitherto shown annually, were thrown into a state of suspension; the average amount for the year of the issue of convertible notes by the Bank of Japan was Y334,000,000 (£34,210,796), a falling off of Y12,000,000 (£1,229,130) compared with the preceding year, and at the same time the price of commodities in Tokyo showed a downward tendency. While the discount rate of the central bank was not changed, banks generally assumed a cautious attitude and the economic world experienced some difficulty in finding capital.

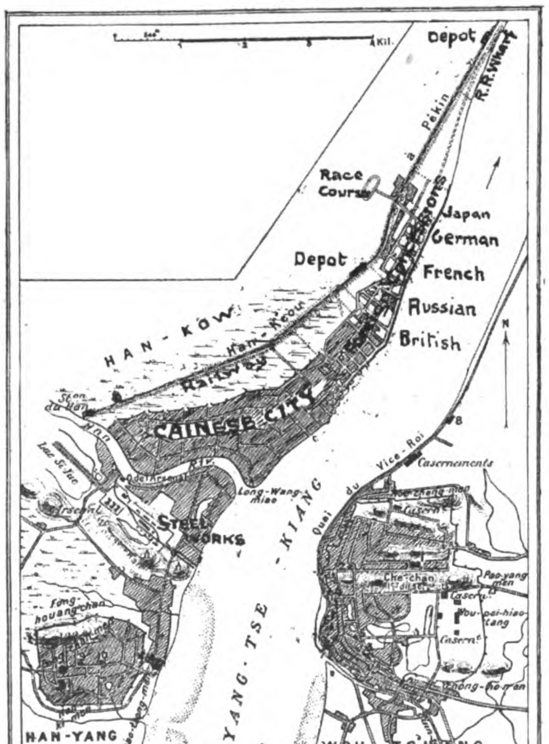
As a consequence capital required for newly projected enterprises fell from Y521,000,000 (£53,364,744) in the preceding year to Y380,000,000 (£38,922,462). The increase in the nominal capital of companies was Y271,000,000 (£27,757,861) against Y304,000,000 (£31,137,970) of the former year, and the issue of domestic debentures fell from Y92,000,000 (£9,423,283) to Y64,000,000 (£6,555, 362).

There was a considerable increase in imports on account of importation of foreign capital, progress of already projected enterprises and diminished output of local agricultural products in Hokkaido, the north-eastern provinces and Taiwan. Exports also increased in consequence of the economic condition in China and the increased demand for raw silk in Europe and America. The volume of import trade was Y729,000,000 (£74,669,671) which was Y110,000,000 (£11,267,029) more than the preceding year, while that of the export trade was Y632,000,000 (£64,734,201) an excess of Y105,000,000 (£10,754,891). Thus the total of foreign trade was Y1,361,000,000 (£139,403,872) an increase of Y215,000,000 (£22,021,919). Such prosperity was unprecedented, as never before had the foreign trade reached Y1,300,000,000 (£133,155,792) or both the export and import trade shown an increase of over Y100,000,000 (£10,242,753) in one year. As the currency had been reduced, prices gone down and the trade conditions since the beginning of 1914 had given promise of great improvement, the excess of Y96,000,000 (£9,833,043) in imports was not a matter for any great anxiety.

THE RECONSTRUCTION OF HANKOW

CHINA'S COMMERCIAL AND INDUSTRIAL CAPITAL

Ever since the fateful fire which destroyed the Chinese city of Hankow during the Revolution of 1911-12 it has been generally known that the Chinese Government has been desirous of rebuilding the city upon modern lines and making other improvements in the vicinity compatible with the importance of such a flourishing commercial and industrial centre. It was, therefore, not surprising when it became known that an agreement had been signed between the Central Government and Messrs. Samuel and Company, of London, on September 17 for a loan for this purpose. The Agreement provides that the loan, which is to be known as "The Hankow Improvement Loan," shall be for £10,000,000 at five per cent. interest, and shall be issued in one or more series at a rate to be determined upon by the parties after the conclusion of hostilities in Europe.



The object of the loan is to develop and improve the city of Hankow, and, in particular, to purchase and reclaim the necessary land for new roads and to construct roads; to construct a bridge or tunnel to connect the north bank of the Yangtze River with Wuchang; to construct a bridge, or bridges, to connect the cities of Hankow and Hanyang; to provide a tramway system; to construct a canal with the necessary bridges at the back of Hankow city between the Han and Yangtze Rivers; to build wharves; to provide funds for the purchase by the Government of the existing Electric Light and Waterworks Company's undertakings at Hankow; to provide such further improvements as may be found necessary to improve the city of Hankow, in accordance with modern practice (e.g. the construction of embankments, drainage schemes, etc.); to provide funds for the establishment and maintenance of the Hankow Improvement Bureau to be established by the Government for the administration of the Hankow Improvement Scheme, and for the purchase of all necessary equipment required by the same, also to provide for the establishment and maintenance of the necessary police force required owing to the extension of the city; and to furnish an adequate margin of funds to insure the maintenance of interest payments, pending the completion of the works.

The loan is to be guaranteed by the Central Government and in addition is to be secured by a first mortgage on the property purchased and created with the proceeds of the loan funds, and the revenues of undertakings initiated under the scheme. The period of the loan is to be forty-five years; the interest to be paid half-yearly. The Government will guarantee that the loan shall be free from all present and future Chinese taxes and imposts.

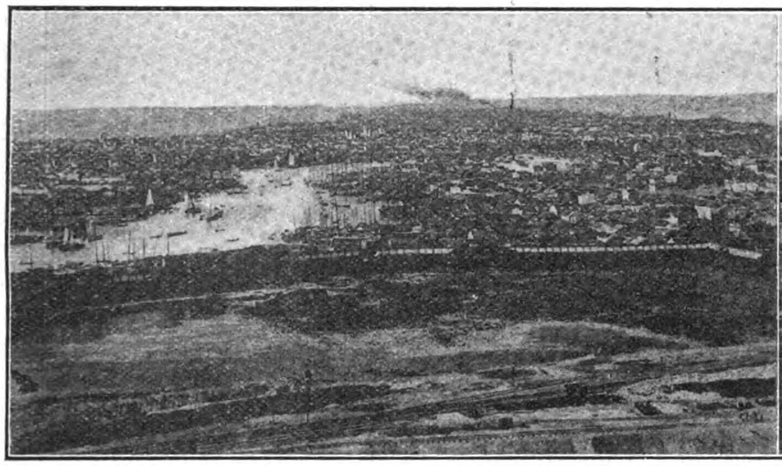
In order to insure judicious expenditure of the funds devoted to the purchase of land the Government and Messrs. Samuel and Company, Limited, will by mutual agreement appoint a commission under the presidency of the High Commissioner, and composed of two Chinese and two foreign members, to undertake the work, no purchases to be effected without the approval of a majority of the Commission.

The engineering work will be supervised by an Engineer who shall be an acknowledged expert in town planning, his appointment to be made by the Government with the approval of Messrs. Samuel and Co., Ltd. He will act as Engineer-in-Chief to the Hankow Improvement Bureau, and will make plans, estimates, and specifications; and generally advise the Bureau regarding the most suitable and economical methods of carrying out the work of remodelling the city of Hankow, building bridges, reclaiming land, installing a tramway system, etc.

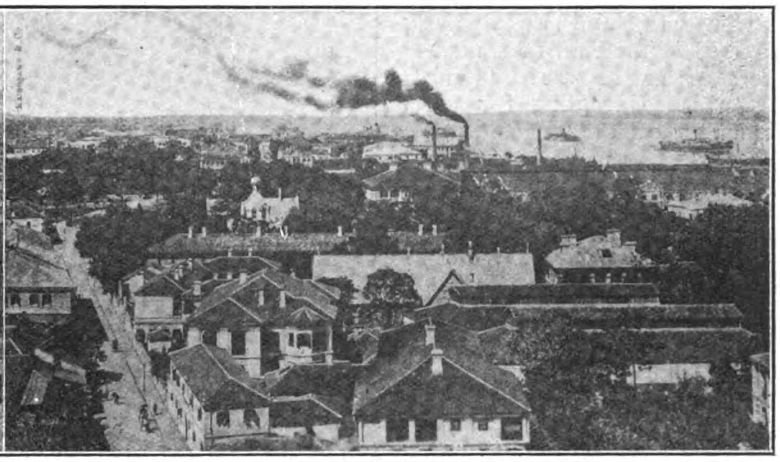
The agreement provides that in the purchase of materials Chinese materials shall, where possible, be specified, and, when materials of foreign manufacture are purchased British materials shall have the preference with due regard to quality and price.

How important it is that the Central Government should take advantage of the destruction wrought by the Revolution to

make of Hankow an up-to-date and efficiently equipped city can be gauged by a study of its location in relation to the rest of China and of the natural resources which are within reach for great industrial development. A glance at a map of China will show that it is placed in an extraordinarily favorable situation to command the trade of a vast portion of the Chinese Republic. It is situated on the great Yangtze River roughly at an equal distance from the north and south, and forms, or will form, the point of junction of the Peking-Hankow and Canton-Hankow railways and will be the point of radiation of other lines running into the province of Szechuan, and eastwards to the sea.



Hankow: The Han River.



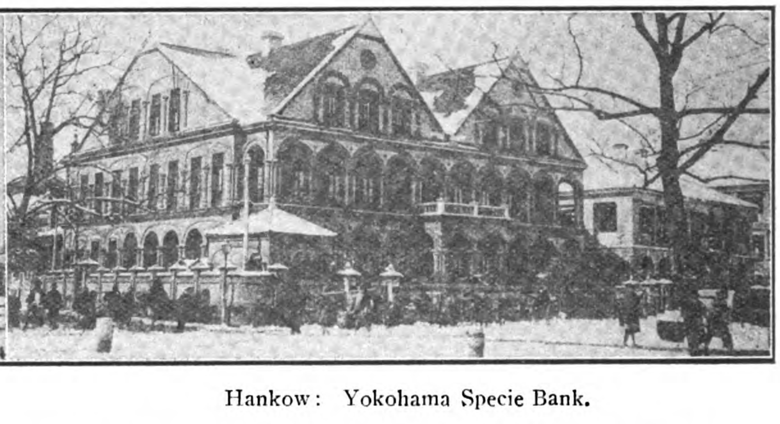
Hankow: The Russian Concession.

On the opposite side of the Yangtze River is the Chinese city of Wuchang, famous as the starting point of the Revolution which resulted in the overthrow of the Manchus and the inauguration of the Republic, and on the opposite side of the Han River, which flows into the Yangtze River at this point, is the city of Hanyang, where is situated the Arsenal and Iron foundry.

On the down-river side of Hankow native city, the one to be rebuilt, are the foreign concessions. They stretch along the left bank of the Yangtze and give an air of solid prosperity to the locality.

Wuchang is actually the capital of the province, and is a walled and fortified city with a population estimated at about 250,000. Though not officially opened to foreign trade its very propinquity to the open port of Hankow is bringing it into more

Hankow: The German Concession.



Hankow: Yokohama Specie Bank.

intimate relations with foreign trade. It is the site, too, of some of the recent industrial undertakings of the Chinese, among which are the Wuchang woollen mill, the cotton mill, and Diederichsen's albumen factory.

Wuchang is situated at the narrowest point of the Yangtze River, the stream being narrowed between two opposite heights, with Snake Hill on the Wuchang side and Tortoise Hill on the Hanyang side. The current of the river is restricted between these two low bluffs to a breadth of 3000 feet, and it is at this point that it is proposed to bridge the stream and by this means to bring the railways to the north and south into direct connection and thus to form an easy means of communication for the thousands of passengers who daily pass to and fro between the cities on the north and south banks of the river.

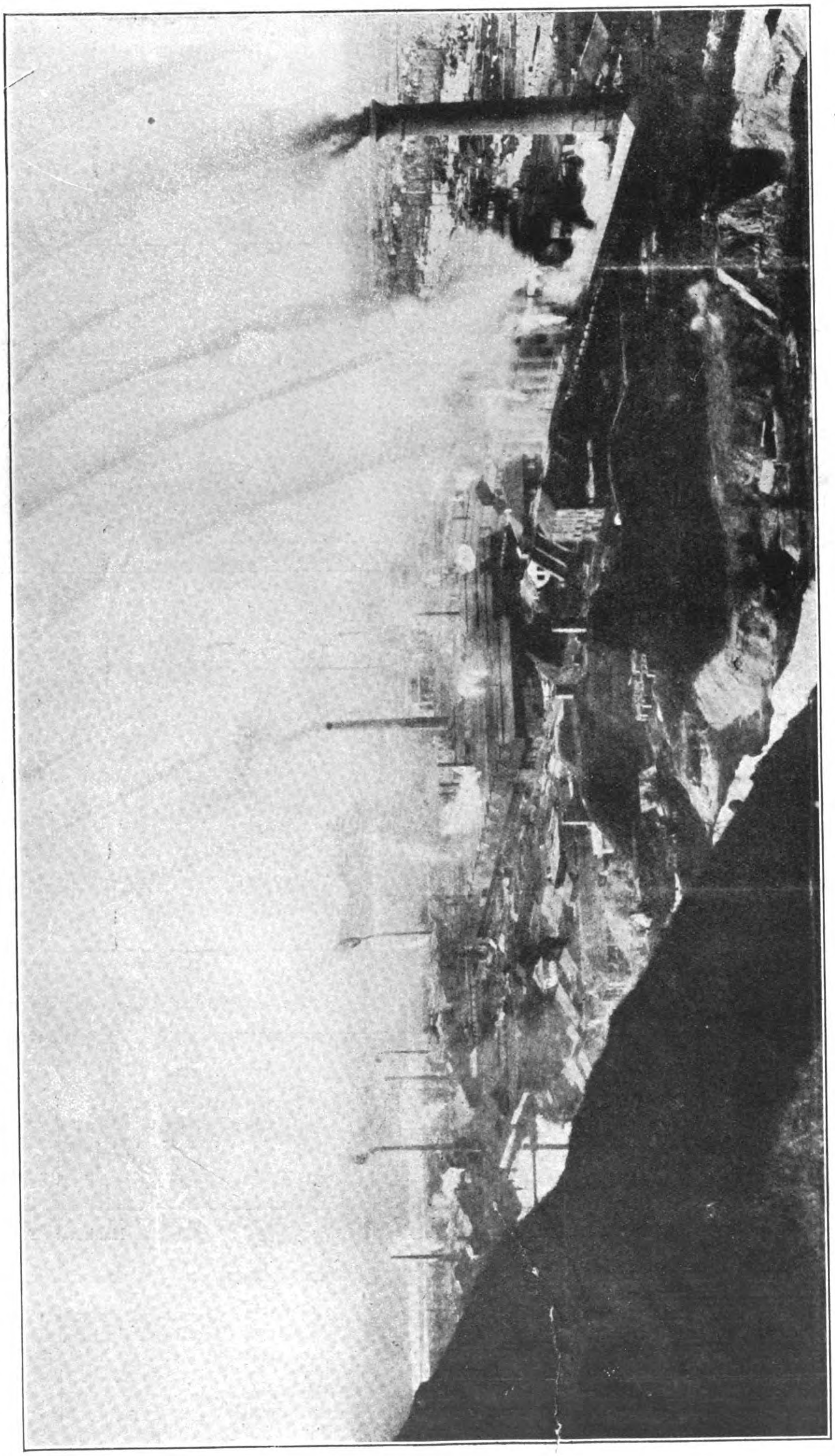
Slightly north-east of Wuchang, in the obtuse angle formed by the junction of the Yangtze and Han rivers is situated the port or "mart" of Hankow. The Chinese city is at the actual junction of the two rivers. Adjoining the Chinese city on the east we have the British, French, German and Japanese settlements, each facing the Yangtze River front, which is bunded for a distance of some three and a half miles.

Immediately opposite Wuchang, and in the acute angle formed by the junction of the Han River and the Yangtze, is situated the city of Hanyang, which takes its name from the two rivers. Its population may be estimated at approximately 70,000, and it owes its existence as a city to the location in this place of the Hanyang Iron works, founded by the late Chang Chih-tung. These iron works obtain their ore from the Tayeh mines, seven and a half miles south of the Yangtze, at a point seventy miles below Hankow, while coal comes from the Pinghsiang collieries in the province of Kiangsi, the three industries being combined in one joint stock company, the Hanyehping Coal and Iron Company. The Company's exports abroad in 1909 amounted to 37,600 tons and in 1910 to 63,700 tons. New machinery was installed to bring the output to 800 to 900 tons per day. The iron works have supplied many of the railways in China with rails, etc. The employees number some 40 Europeans and several thousand Chinese. In Hanyang there is also situated the Government Arsenal, where various types of arms are manufactured.

For all practical purposes Hanyang may be considered as forming merely a suburb of Hankow. The construction of a fixed bridge across the Han River will probably not be practicable, owing to the sudden and great changes in the height of the water level. It is therefore proposed to facilitate the communication between the two cities of Hanyang and Hankow by means of a transporter. When this is completed the three cities will practically be welded in one.

Even before the revolution it had long been apparent to the Chinese Government that the condition of the city of Hankow was unworthy of the premier industrial and trading centre of China, and still more so of the future development of Hankow as the strategic centre of the Chinese system of railways and waterways. The Han River was, and is, always choked by the enormous numbers of native craft plying upon it. Excepting for the wharves of the China Merchants Navigation Company, and those of Messrs. Butterfield and Swire, there are no facilities for loading and unloading goods from steamers in the native city, the only accommodation provided in this respect being situated in the foreign settlements. The Chinese city of Hankow, with its swarming population, was restricted to a very small area, with narrow, dirty, and insanitary streets. No proper provision for intercommunication existed between the three cities whose aggregate population was at least 1,400,000. No proper scheme existed for the extension of the city which must follow on the further opening up of China by railways, and the further increase in its foreign trade.

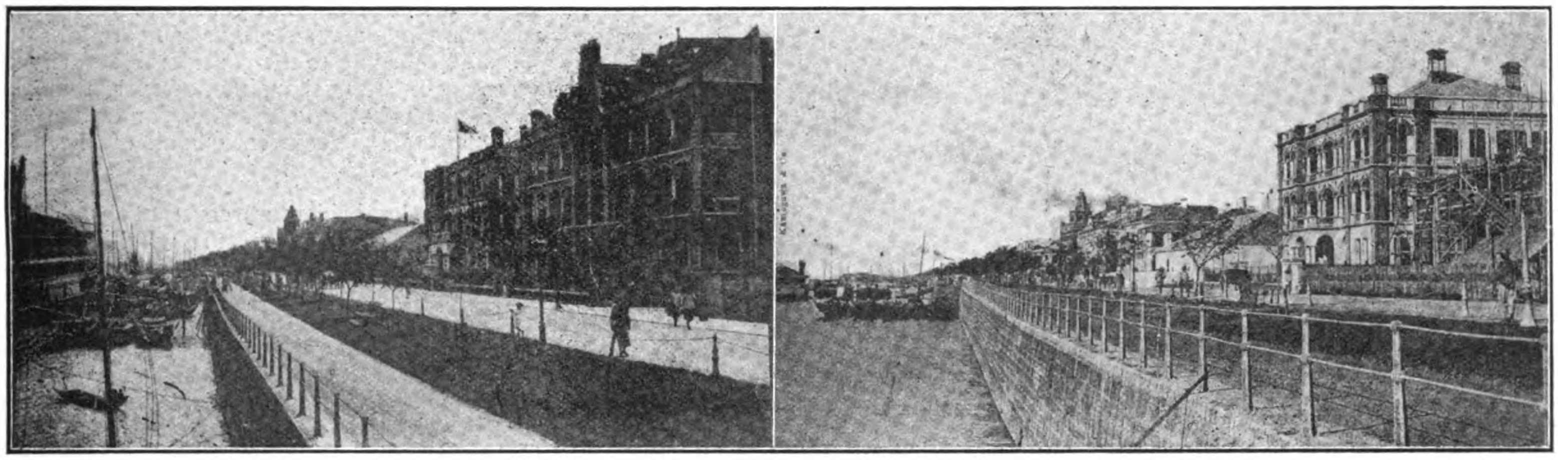
In 1911 the three cities formed the centre of the fighting between the Imperialists and the Revolutionists. The actual signal for the premature outbreak of the Revolution was given by the explosion of a bomb which occurred in a house in the Russian Settlement at Hankow. This led to the discovery of the plans of the revolutionists, who, seeing their plans exposed and having a large part of the garrison of Wuchang on their side, struck. In the fighting which ensued Hankow and Hanyang were taken and retaken by Imperialists and Revolutionists, while Wuchang remained in the hands of the Revolutionists throughout. Foreign settlements were respected by the belligerents and suffered no other damage than may have been done by a stray shell. On the final capture of the native city of Hankow by the Imperialists and before peace could put a stop to hostilities the city was burned to the ground, and upon its ashes the ultimately establish-



The Hanyang Iron and Steel Works.

ed Republican Government decided to build a city upon modern lines. However, their good intentions were frustrated owing to financial stringency and the Chinese began to rebuild of their own accord upon lines almost similar to the old conditions, though the roads have been considerably widened by the authorities refusing to issue building licenses except upon the understanding that buildings were to be set back three feet from their former site. Now that the Government has entered into an agreement with Messrs. Samuel and Company, Limited, steps will be taken, when the time arrives, to put into effect many improvements so that the city may take the place it ought to occupy as the leading commercial and industrial centre in China.

northern Hupeh, Honan, (with an estimated population of 22,100,000), and southern Shensi. The Tungting Lake and its feeders contribute the trade from the south of the province of Hupeh, the province of Hunan, (with an estimated population of 22,000,000), and part of the province of Kweichow. While Hankow is thus favorably situated for steamer traffic from the west of China, and from Hankow itself to the eastern provinces, it must be borne in mind that the city is the highest point on the Yangtze to which ocean going vessels of light draught can ascend at all times of the year, while during a very large portion of the year it is accessible to ocean-going steamers of the deepest draught. During the months of April to October, when the



Hankow: The Bund.

Trade to Hankow from the south now chiefly finds its way by various waterways to the Yangtze, but this trade will be greatly facilitated and augmented by the completion of the Canton-Hankow railway now in course of construction. A further link will be forged with western China by the completion in the next few years of the railway to Szechuan, a joint British, French, German and American enterprise, while further feeders such as the Shasi-Shingyi line are already contracted for or contemplated. The construction of the Sinyangchow-Pukow railway, being built with British capital, and other lines will also contribute to the growing trade of the city.

Disregarding for the moment the construction of these new methods of transportation which will facilitate the movement of goods and people along the already defined lines of travel in China it will be seen that Hankow commands the trade of the whole of central China moving along the waterways which form the main arteries of traffic. Thus it receives the whole of the river-borne trade from the provinces of Hupeh and Szechuan, which reaches Hankow along the Yangtze and its tributaries, and taps a region with a population of 78,110,000 for Szechuan, and 34,000,000 for Hupeh. The river Han, from which Hankow, meaning "Han mouth," takes its name, brings to it the trade from

Yangtze is high, ocean-going steamers of 15,000 tons burden may be seen lying alongside the wharves of Hankow, 600 miles or more from the sea, while on one occasion the British first-class battleship "Glory" anchored off the bund.

Reliable statistics as to the population of Hankow, Hanyang, and Wuchang, of which it forms a portion, are not forthcoming. In Captain Blackiston's account of Hankow in his survey of the Yangtze River when the place was first opened to trade on the conclusion of the Treaty of Tientsin, 1860, we learn that the city was then already a place of great importance. This expedition commanded by Admiral Hope, ascended the Yangtze River for the purposes of survey, and in order to throw open to trade the ports of Chinkiang, Wuhu, Kiukiang, and Hankow, and to establish Consulates there. During the fifties and early sixties the whole of central China was ravaged by the Taiping rebels. Little was heard outside of China of the wholesale destruction of human life and property that occurred in the interior of the country during the years that the Taipings were in possession of most of the Yangtze region. The ravages of these rebels were only observed by foreigners in the vicinity of the then opened Treaty ports such as Shanghai; but after the rebellion was subdued by the exertions of Chinese statesmen, such as Tseng Kuo-fan

Hankow: The Bund at Low Tide.

Hankow: The British Concession.

and Li Hung-chang, with the co-operation of General Gordon, whose services were lent to the Chinese by the British Government, and on the opening of the Yangtze region as a result of the Treaty of Tientsin, it became apparent that the whole country, lately the most prosperous portion of the Chinese Empire, had been to a large extent depopulated. Reliable authorities have calculated the loss of life in China owing to the Taiping and the Mohammedan Rebellions at approximately 100,000,000—c.f. Putnam Weale in "Conflict of Colour."

No better instance of the extraordinary recuperative powers of the Chinese nation, and of the productiveness of the Yangtze region, can be adduced than the fact that in spite of this wholesale slaughter, the ruined cities were soon rebuilt, the countryside which had reverted to a jungle interspersed with ruined villages, was soon repopulated and cultivated, and during the forty years of peace which elapsed between 1860 and 1900, the population of the Yangtze area recovered to a point higher than it had ever attained to in Chinese history. Trade at all Yangtze ports showed a rising curve during all these years, but first and foremost the trade of Hankow, as attested by the returns of the Maritime Customs Revenue, increased out of all proportion to all others, owing to the exceptional situation of the port, which has been described as the Chicago of China. In the "China Year Book," 1913, the estimated population of Hankow, exclusive of the sister cities of Hanyang and Wuchang, is given as 826,000, while that of the province of Hupeh, of which Wuchang, with its sister cities of Hankow and Hanyang, is the capital, is given as 34,000,000 (Customs estimate, 1910, 34,000,000; Chinese official census, 1885, 33,600,000).

Thus we see Hankow as the trading portion of a group of three cities with a total population of something over 1,000,000, is situated in the strategic centre for trade purposes of the principal provinces of China, namely, Hupeh, Hunan, Honan, Szechuan, and Shensi, each of these provinces being equal in area and population to a European state of the first order. The aggregate population of these five provinces is not less than 158,000,000, or about the same as the combined population of Germany, France and the British Islands, with Belgium and Holland thrown in. Many of the provinces of China contribute to Hankow's import and export trade, and again a large portion of the trade contributed by the millions of inhabitants of Central Asia finds its outlet to the sea at Hankow, while their requirements are imported through the same avenue.

The Bridge Over The Yangtze.

In this suggested structure provision will be made for a roadway thirty feet wide, two six-feet wide cantilever pathways, and a single line of railway.

The type of bridge at present suggested is a constant level floating bridge some 3,750 feet long, provided with twin opening spans electrically operated, giving a clear waterway of not less than 200 feet for the passage of steamers plying between Hankow and Ichang, which are much smaller craft than those trading between Hankow and down-river ports.

It is considered that a structure of this particular type has many advantages in overcoming some of the difficulties in foundation works. The general idea embodied in this important structure was detailed in one of the competitive designs for a bridge over the Hooghly at Calcutta. The constant level floating bridge has a decided advantage over an ordinary floating bridge which would rise and fall according to the considerable variation of the level on the Yangtze. It is thought, however, that this extreme variation in water level may necessitate, for economical reasons, having moderate gradings from each bank of the river towards the centre of the bridge.

In order to maintain the bridge at constant levels the submerged pontoons carrying the superstructure will be anchored down at and below the low water level of the river by means of tension rods, which will, in turn, be attached to groups of cylinders sunk deeply into the bed of the river. Consequently there is always an upward pressure exerted by the pontoons, and the stress in the above-mentioned tension members never becomes zero and is only reduced by the full application of the external load which the bridge is designed to carry.

It is estimated that one group of steel cylinders forming a "foundation" to sustain the upward pull as a swing span would entail the use of some twenty cylinders not less than 16 feet in diameter, while the ordinary fixed span groups for the same purpose would each need twenty cylinders not less than 10 feet in diameter as a foundation. The submerged pontoons providing the floating power to carry the superstructure would be of considerable length and diameter, strongly framed internally and divided into numerous watertight compartments. Provision will be made to remove cylinders for repairs as necessity arises. Until the necessary investigations at the site are concluded it is impossible to indicate more than the present general intention of those responsible for carrying into actual effect this large and much needed bridge, which will certainly rank as an undertaking of the first magnitude, involving as it will considerable engineering difficulties.

CHINESE PREMIUM BONDS

An interesting experiment is being made in China in the direction of sanctioning the issue of premium bonds. Premium bonds differ from the ordinary bonds in that instead of carrying the market rate of interest, they pay a smaller rate but some of the holders win premiums ranging from a considerable amount. In other cases the bonds carry no interest at all, but a large number of premiums is given and bonds that are drawn without winning a Premium are redeemed at par. This appears to be the method adopted by the Hsin Hua Savings Bank which is to issue bonds by permission of the Chinese Government. Regulations governing the procedure for the sale of these bonds have been drawn up, and the following is a translation :—

Regulations for Offices

1.—The General Office shall be established in the building of the Hsin Hua Savings Bank in Peking and it shall be organised by the representatives of the Telegraph and Post Department or the Postal Accounts Department of the Ministry of Communications, the General Post Office, the Bank of China, the Bank of Communications and the representatives of this Bank.

2.—There shall be one provincial agent office in each province and it may be located either in the provincial capital or in a commercial port which shall be decided by the General Office. The Bank of China, the Bank of Communications and the Telegraph and Post Offices of the province shall elect the agent among themselves. After the election is made, the General Office shall issue an official letter of authority to the agent.

3.—The number of branch agent offices to be established shall be decided by the provincial office and the Bank of China or the Bank of Communications, or the Telegraph or the Post Office may become the agent. The Bank of China or the Bank of Communications shall have the privilege of becoming the agent at their option.

4.—The provincial agent office shall be under the control of the General Office and the branch agent offices shall be controlled by the provincial Office.

5.—The duty of the agent offices shall be as follows :—

(*a*) To proclaim the regulations.
(*b*) To persuade the people to buy the premium bonds.
(*c*) To take charge of the distribution of lottery bonus.
(*d*) To take charge of the repayment of the capital when due.
(*e*) To announce the winning lottery numbers.

6.—The agent offices shall do their best to give information on all matters to the inquirers.

7.—The agent offices shall pay without delay when bond holders ask for the payment of the lottery bonus or the capital invested. A commission of 5% may be charged for the lottery bonus above the 8th grade. No discount is allowed to be made on the lottery bonus below the 8th grade.

8.—The branch agent offices may cash at the provincial office the lottery bonus or the capital paid by them upon the presentation of the

bonds at any time. The provincial office shall report every month to the General Office the amount of payments made by it or by the branch offices.

9.—The agent offices shall immediately stamp the bonds after payment so as to cancel them. The stamped bonds are to be returned to the General Office once every month.

10.—The Bank of China, the Bank of Communications, and the Telegraph and Post Offices of those places where there are yet no agent offices, shall also give their service according to clauses (a) and (b) of Article 5, and they shall do their best to give information to inquirers.

11.—Any amendments of the regulations will be announced by public notice.

It is provided also that individual persons may become agents for the sale of the premium bonds under the control of the branch agent offices, and individual persons may enter into agreement with the General Office to become agents. Where an individual person is agent there shall be no agent office.

Regulations Governing Issue

1.—The premium bond is to be issued by the Hsin Hua Savings Bank with the permission of the Government.

2.—The repayment of the capital of the premium bonds and the payment of the lottery premium is guaranteed by the Government.

3.—One premium bond shall be worth $10 and this is to be divided into ten coupons of $1 each.

4.—The amount of every issue of premium bonds shall be 1,000,000 bonds or 10,000,000 coupons.

5.—There shall be one issue of premium bonds every year.

6.—The repayment of the capital of the premium bonds shall be made at the end of the third year. The date of repayment shall be marked on the face of the bonds. But holders who get the chances shall receive the premium on the presentation of the bonds but shall receive no payment of their capital.

7.—Instead of paying interest there will be the payment of premium by means of lottery. The lottery shall take place once a year and there shall also be the payment of premium once a year.

8.—The date and the place of lottery shall be decided at time of the issue of the premium bonds and shall be printed on the face of the bonds. No change is allowed under any circumstance.

9.—The opening of the lottery shall be made before the public and the Government shall appoint two censors, the Ministry of Finance shall appoint one Superintendent, and the General Chamber of Commerce of the locality shall elect two representatives to supervise the opening of the lottery.

10.—Three lotteries shall be made for every issue of premium bonds. One lottery is to be made every year. Those who had already obtained the premiums shall have no more drawing. There will be 5,000 prizes or 5,000 bonds or 50,000 coupons. Their amounts are as follow:—

1st prize, $100,000 for every bond or $10,000 for every coupon.
2nd prize, $40,000 for every bond or $ 4,000 for every coupon.
3rd prize, $30,000 for every bond or $ 3,000 for every coupon.
4th prize, $20,000 for every bond or $ 2,000 for every coupon.
5th prize, $10,000 for every bond or $ 1,000 for every coupon.
6th prize, two bonds of $5,000 each or $500 for every coupon.
7th prize, six bonds of $2,500 each or $250 for every coupon.
8th prize, thirty bonds of $1,000 each or $100 for every coupon.
9th prize, sixty bonds of $500 each or $50 for every coupon.
10th prize, three hundred bonds of $250 each or $25 for every coupon.
11th prize, six hundred bonds of $100 each or $10 for each coupon.
12th prize, 1,000 bonds of $50 each or $5 for every coupon.

There will be 999 bonds of $40 each or $4 for each coupon for the bonds which have the same numbers as that of the last three denominations of the bonds of the 1st prize, 999 bonds of $30 each or $3 for every coupon for the bonds with the last three numbers same as the bonds of the 2nd prize; 999 bonds of $20 each or $2 for the bonds with the last three numbers same as the bonds of the 3rd grade.

The total number of bonds is to be 50,000 and the total amount of premium is $550,010.

11.—The payment of the premium or the repayment of the capital will be made on presentation of the bonds so that no registration of missing bonds will be made.

12—The regulations of the bank shall be observed respecting the employment of the money obtained by the sale of premium bonds. The Government may at any time appoint special officials to supervise the Bank

13.—The 1st, 2nd, 3rd, and 4th prizes shall be paid by the Hsin Hua Savings Bank in Peking and the prizes below the 5th grade shall be paid by the offices of the Hsin Hua Savings Bank by which the bonds are sold or by the Banks of China and Communications or the Telegraph or Post Offices.

14.—The prize winner shall obtain the prize within one year dating from the date on which the lottery was opened. After the time limit prizes will not be paid.

15.—Bond holders who fail to get any prize after three drawings of the lottery, shall get their capital at the Hsin Hua Savings Bank or the Banks of China or Communications or the Telegraph or Post Offices within one year dating from the time when bonds become due. No capital will be paid after that time.

16.—The Bank shall be the Chief Office for the issue of the premium bonds and the Banks of China and Communications and the telegraph and Post Offices shall be the agencies. The Chief Office shall be supervized by an official of the Ministry of Finance. The regulations governing the agent office shall be fixed separately.

17.—Any person desiring to be agent for bonds may apply to the Chief Office or the agent offices. Regulations governing such agents shall be filed separately.

18.—If the bonds are not wholly sold at the time when the lottery is to be drawn at the first year, the prize numbers will be fixed according to the number of bonds sold and the prizes are to be given in accordance with Article 10th. This arrangement shall be followed at the time of drawing the lottery at the 2nd or 3rd year.

19.—Any amendment of the regulations shall be decided by the Board of Committee of the Bank with the approval of the Ministry of Finance.

THE PENSHIHU COLLIERY

According to the *Manchuria Daily News* the first smeltery at the Penshihu Colliery is approaching completion. The principal machinery was expected from abroad by September at the latest, and it was intended to complete its installation during October so that the smelting work might be begun during the current year. The European war it is feared will interfere with the execution of the Company's orders. Part of the machinery is already on the way on board a steamer, but there is no knowing what will happen thereto. The prolongation of the war will retard the installation of not only the first smeltery, but also the second and third, arrangements for which had already been concluded at an earlier date.

PETROLEUM IN BRUNEI

In the report of the State of Brunei for 1913 the Resident, Mr. F. W. Douglas says:

The prospects of a petroleum field being discovered at no distant date within the boundaries of the State have largely increased during the year. There are at the present moment three companies interested.

At Jerudong the Shanghai-Langkat continue their boring. Frequent mishaps to machinery and an apparently inadequate supply of spares and suitable repairing apparatus render break-downs of frequent and continuing occurrence. No very promising results have hitherto been reported or, for that matter, appear probable. The company pursues its policy of drilling one very deep well in the hope of meeting oil.

From the Tutong river running northeast, the Anglo-Saxon Petroleum Company has recently taken out a prospecting licence and its Geologist has spent some months in exploring the numerous seepages reported. It is, as yet, too early to form any opinion as to the ultimate success or failure of the company's operations in this locality.

At Blait the British Borneo Petroleum Syndicate, Limited, took over the interests of the Borneo and Burma Petroleum Syndicate. Operations were energetically carried on and, in view of the grave difficulties encountered, first at the Blait River bar, then in transporting boilers, machinery and casings through miles of waterlogged jungle, and finally in making earth roads now across swamps, then along the sides of precipitous jungle clad hills, nothing but praise can be awarded to the perseverance shown.

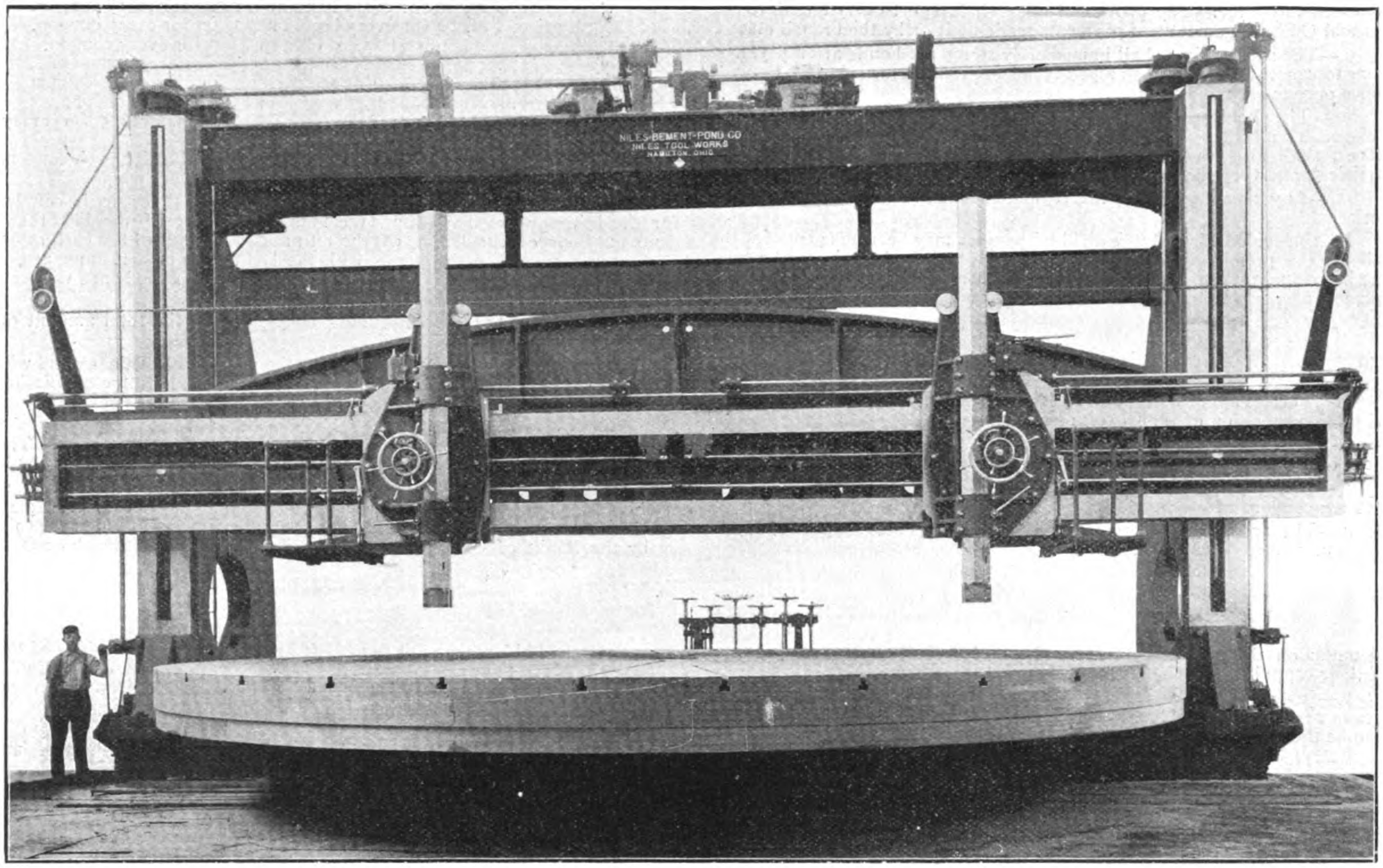
The demarcation of the various areas applied for under the prospecting licence was undertaken; and finally eight lease areas aggregating over eighteen square miles were surveyed. The work was exceptionally exacting and told severely on all the demarcators and coolies employed.

I took over the surveyed areas and picked up the boundary stones round the outer sides of the various blocks towards the end of August: and leases will shortly be engrossed for issue.

TO LINK SINGAPORE AND THE PENINSULA

Ten spans, each 313 feet long, are suggested as the most suitable for the big bridge with which it is proposed to link Singapore Island with the mainland of the Malay Peninsula. Thus, if the scheme matures, the new bridge will be one of the longest in any of the colonies. The designers, says the "Colonial Journal," are faced with a peculiarly complex problem. Not only is the bridge of unusual length, but the borings, contrary to expectation, have shown the strata to be, at any rate in places, unreliable, their composition being similar to that which caused considerable trouble during the construction of the new docks at Singapore. Then, for navigation purposes, a swing-open must be included or, at least, a bascule opening at one end of the bridge. Provision in the design has moreover to be made for carrying two 3 feet diameter mains across the Straits. The weight of the water alone in these two pipes will be 1,090 tons although this of course will be spread over the whole length of the bridge.

In view of these difficulties, it was at one time thought feasible to substitute a rubble mound, leaving gaps for water traffic. This had to be negatived on the score of cost and also by reason of the current in the Straits, which is at times as much as five miles per hour, and would be much greater if the waterway were restricted. Alternative estimates have been prepared for the bridge, but in view of the very heavy outlay involved, it is probable that a little more money will be spent in further investigations in order to secure, if possible, a site giving less water and more trustworthy strata.



LARGEST BORING MILL EVER BUILT IN AMERICA

At the Brooklyn Navy Yard, there has recently been completed the installation of the largest Boring Mill that has ever been built in America. This Mill was made by the Niles-Bemont-Pond Company, at the Niles Works, Hamilton, Ohio.

It swings 36′ in diameter and has 12′ under tools. The great swing of this machine is required for finishing the tracks of the immense turrets carrying the 14 and 16 inch guns of the new battleships. The Mill will also be used for boring cylinders and machining casings of the giant steam turbines for our war vessels.

The significant feature about the size of this Mill is that it is not of the so-called "extension" type, but it is a regular cross-rail machine with an actual swing of 36 ft. 2 inches with the housings in a fixed position.

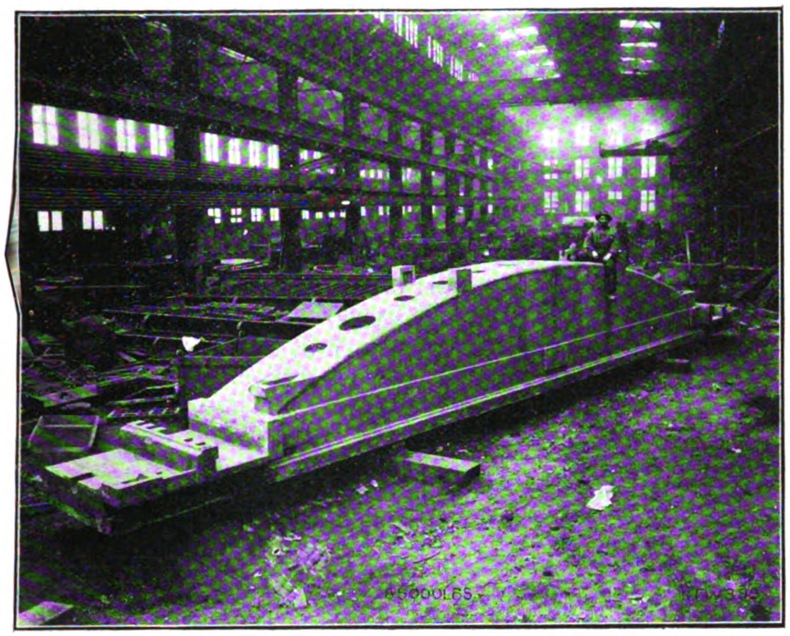
An idea of the size and massiveness can be gained from the fact that the total net weight including motors is 665,000 lbs. or over 330 tons.

The table is designed to carry a weight of over 200,000 lbs. The extreme size of the table, 34′ diameter, made it necessary to cast in three parts, the central and one side section being shown in accompanying illustrations, Figs. 402 and 405. The three sections of the table weighed 225,000 lbs. The table is supported on conical rollers running in a circular track 24′ in diameter, sunk in the bed. Rollers are of high carbon steel and fitted to circular guide frames to insure alignment of the rollers. In addition, the table rests in an annular adjustable bearing ring surrounding the central spindle. The bearing ring is adjusted vertically by steel screws. The spindle is centered in the bed by an adjustable conical bush.

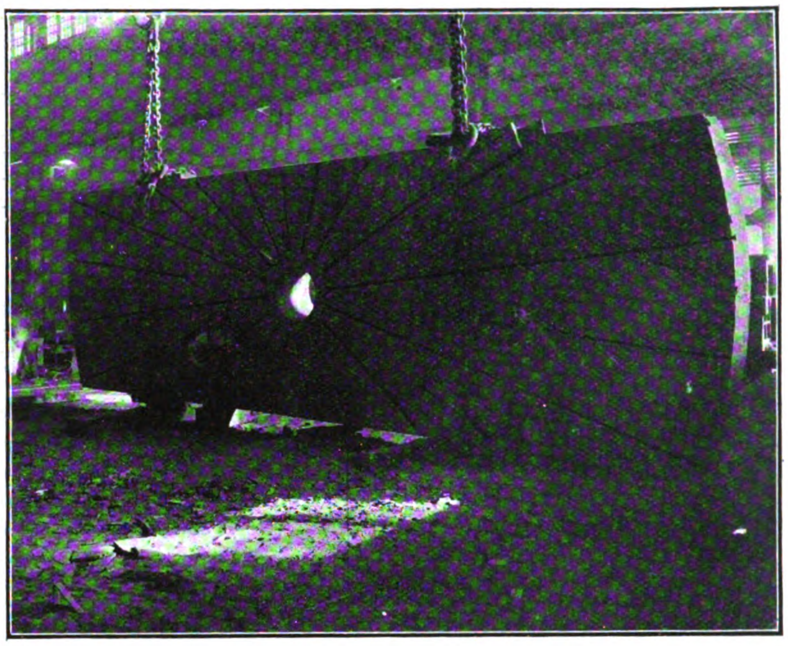
Table tracks and spindle have forced lubrication from a pump operated from the main driving motor.

The table is fitted with a spur gear 28′ diam. which is a semi-steel casting, with teeth cut from the solid. It is driven by means of two forged steel pinions, placed on opposite sides of the Mill.

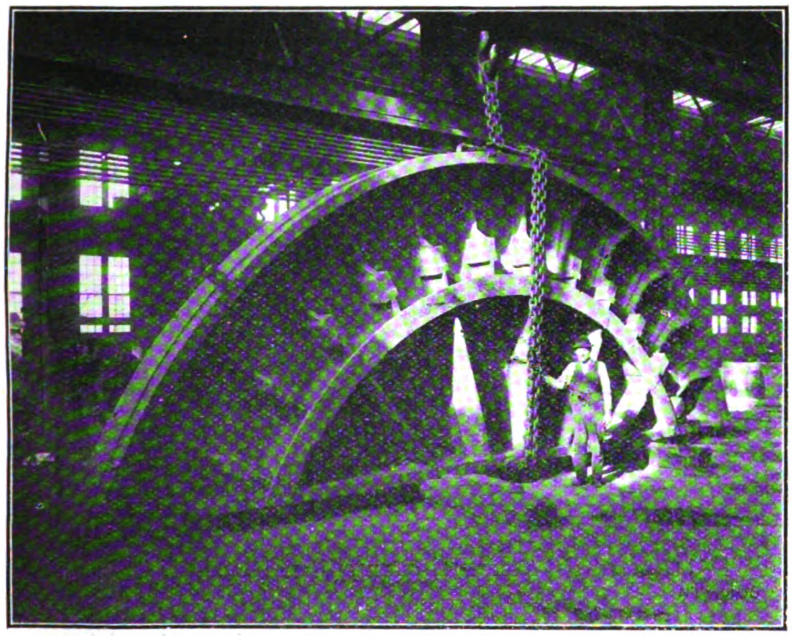
One of the Housings.—Figure 407.



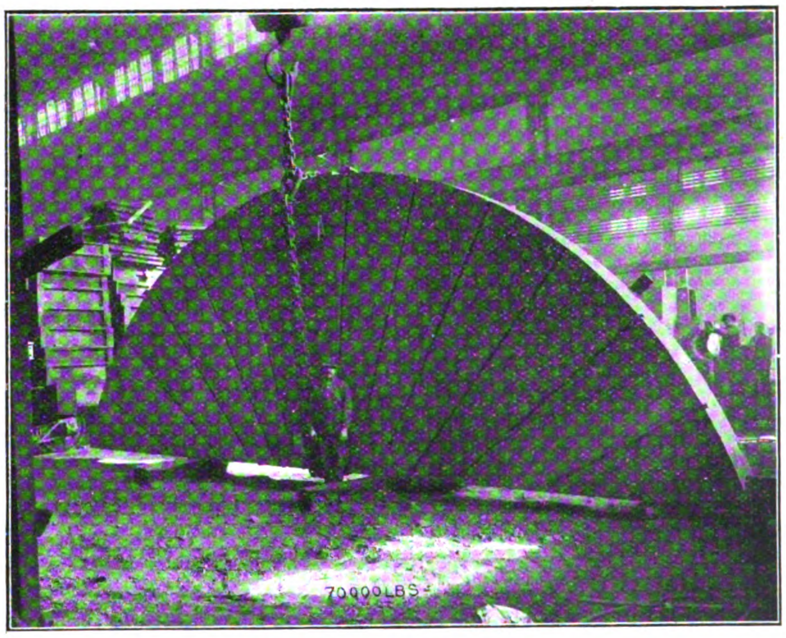
The Cross Rail.—Figure 400.



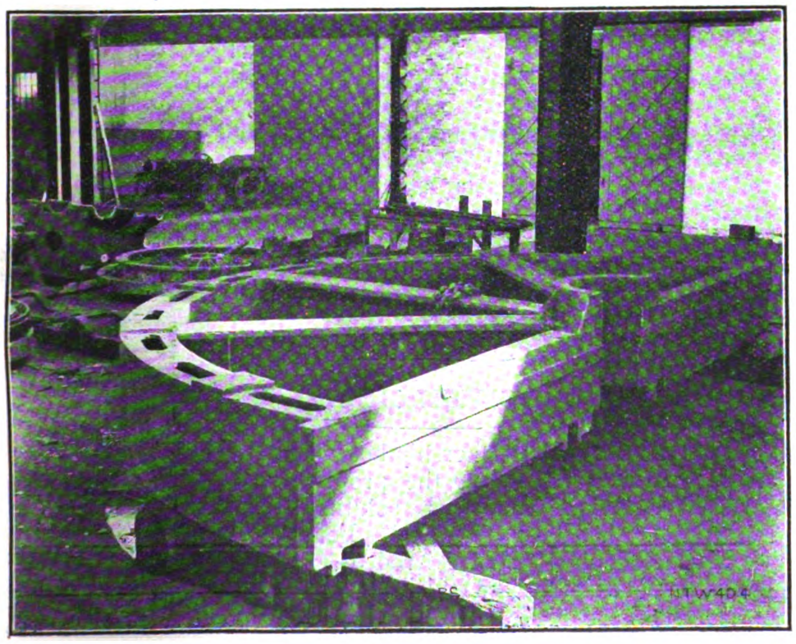
Central Section—Figure 402.



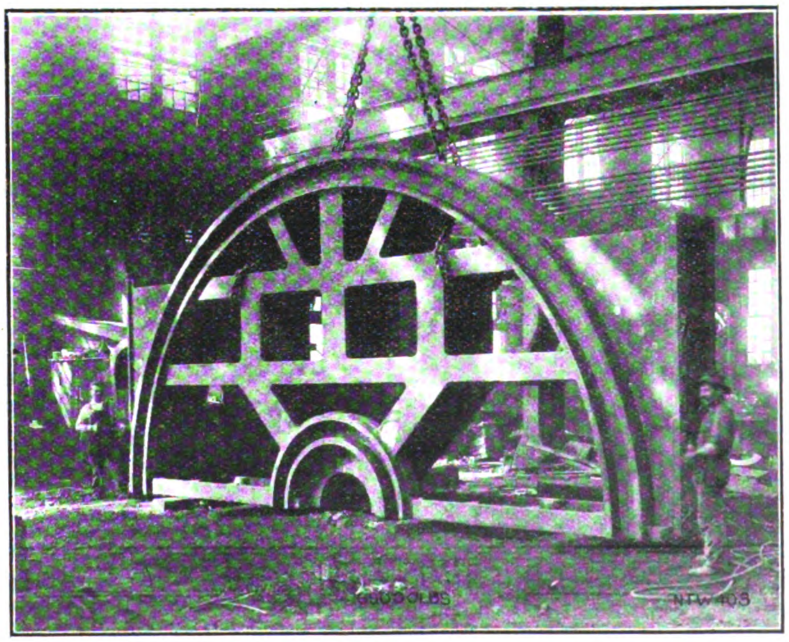
Side Section—Figure4 06.



Side Section—Figure 405.



The Bed—Figure 404.



The Bed—Figure 403.

The main part of the bed is made in two sections shown in Figs. 403 and 404. There are two bed extensions attached to the main bed. The whole bed weighed 69,000 lbs. in the rough and the other section 48,600 lbs. The table tracks are rigidly supported by the vertical webs of the bed.

The housings, as shown in Fig. 407, are box castings of massive construction, connected at the top by a heavy cross brace. Rigidity is further increased by a steel girder connecting the housings. Each housing weighed in the rough 32,000 lbs.

The cross-rail, as shown in Fig. 400, is about 46 ft. long and weighed 85,000 lbs. in the rough. It is a box casting. Bolted to the top of the cross-rail is a massive camber beam. Its function is to stiffen the cross-rail and take up the sag due to the great weight of the cross-rail and the heads. The combined depth of the cross-rail and the camber is 8′.

The rail is raised and lowered by means of a 30 HP motor located on the top cross brace and connected to four elevating screws of large diameter working in bronze nuts.

The cross-rail is fitted with two heads for boring and turning. The heads are right and left, so arranged that either can be moved to the center. They are provided with graduated swivels, with worm gearing for setting them over to any angle on either side of the vertical of 30 degrees or less.

The heads and bars are provided with rapid power traverse, as well as hand movement for close adjustment. The rapid traverse is operated by a 10 HP motor located on the top brace. The control of these operations and also the engaging and disengaging of feeds is from a platform attached to each head, upon which the operator stands. The operating levers are interlocking so that the rapid traverse cannot be engaged for one head unless it is disengaged from the other, making it impossible for the operator on one head accidentally to move the opposite one.

Eight reversible power feeds are provided for the bars and are operative in a vertical or angular direction. The feeds for each head are entirely independent and positive. Means are provided by friction clutches to prevent the breakage of feed gearing, should either bar or saddle encounter obstruction.

The main drive is by a 75 HP motor, and speeds are provided for boring, turning and facing operations.

PUBLIC WORKS IN MANILA

A committee has been appointed by Governor-General Harrison to render a report on a scheme for the development of the water-front property known as Manila reclamation area No. 1, embracing the sites now occupied by the government piers, with the end of making it the commercial district of the city, and the construction of two bridges or tunnels traversing the Pasig, one near plaza Moraga, largely for the use of Escolta and general retail section traffic, and the second at a point further down stream for the purpose of opening up and assisting the early development of the reclamation area. The committee consists of Secretary Clinton L. Riggs of the department of commerce and police, Commissioner Rafael Palma, Dr. Apacible, chairman of the assembly committee on public works, Alcalde Felix M. Roxas, Assistant Director Walter E. Jones of the bureau of lands, J. S. Stanley, deputy collector of customs, and Willard L. Gorton, chief designing engineer of the bureau of public works.

The powers conferred upon the committee by the chief executive are the fullest, the official order authorizing that body to study and report upon "the development of property of the insular government known as Manila reclamation area No. 1 for the purpose of making it the commercial district of the city of Manila and securing therefrom an adequate return to the government, and the construction of a new bridge across the Pasig River, the north span of which shall be at a point opposite or near that part of plaza Moraga fronting the river, and the south span at a point on the other side of the river directly opposite the north span."

Further details of the projects now under consideration are included in the instructions to the committee, which point out the particular phases of the projects to be given special study.

"In connection with the development of the reclamation area," the order continues, "the committee is authorized to investigate and make recommendations especially as to the desirability and practicability of erecting one or more additional piers for transoceanic shipping, of building a sea wall between the piers so as to make it possible for interisland boats to moor by the sea wall and discharge their cargoes, and of constructing a shed along the water front connecting all of the piers. It is also authorized to examine into and present recommendations as to the means of obtaining from property now belonging to the insular government in the city of Manila funds with which to defray the expense of the development of the said reclamation area. Finally, the committee is authorized to consider the construction of a bridge at a point lower down on the Pasig River calculated to open up and assist in the early development of that area.

"In connection with the construction of a new bridge near plaza Moraga, as well as with the proposed lower Pasig River bridge, the committee is requested to look into the convenience and practicability of a tunnel being substituted for a bridge at either of the places indicated. The committee shall also ascertain if possible the difference between the cost of construction of a bridge and that of a tunnel."

THE TEA TRADE IN CHINA

Granted external and internal peace there is no reason why China should not make marked progress in the next few years. More attention must, however, be given to the question of exports. A strong effort is necessary if the tea trade is ever to regain the ground it has steadily been losing for years past. In 1913 the export of tea to foreign countries fell to 1,442,109 piculs, the lowest figure since 1906. More than half of this was taken by Russia, but Ceylon and Indian teas are reported to be gaining ground rapidly in Russia and there is a grave danger of China losing the one great market that remains to her. Comparing the exportations of tea to Great Britain, Germany, France, Austria-Hungary and America in 1912 and 1913 it is found that in each case there was a very marked falling off. It is evident, therefore, that better methods of culture and preparation must be adopted. This is a task that has its obvious difficulties in a country such as China. The necessity for improvement was recognised long ago by the small fraction of China's population that devotes to problems such as this the attention that they deserve. But the obstacle is now, and always has been, the very people who stand to gain enormously if the great staples of China's export trade are to be permanently popularised with the foreign consumer. Naturally it is difficult to persuade men to change methods that have the sanction of centuries behind them, but it must be done.

This is perhaps a matter more for the Provincial than the Central authorities, although the support of the Central Government would be necessary if any real and lasting reform is to be effected. Officials who have made a study of foreign methods and foreign requirements should be sent on a campaign of education through the tea-growing districts and wherever possible actual object-lessons should be given. It might also be desirable to secure the services of competent experts from India or Ceylon. The accomplishment of tangible results will take time, but eventually a perception on the part of the tea-growers that reforms will mean an increased financial return must lead to their adoption.

OWEN BROS.

We learn that the partnership between Mr. Harold M. Rudd and Mr. Alfred E. Owen, the proprietors of the well and favorably known bituminous solution for iron protection, "Rosphaltic," has been dissolved. For the future the business will be carried on by Mr. Alfred E. Owen and his brother Charles E. Owen under the style and title of Owen Bros.

CHINESE BONDS IN EUROPE

COMPLICATIONS OCCASIONED BY THE WAR

A point affecting holders of interbourse bonds and some of the Chinese issues in particular has arisen out of the cessation of all transactions between London and Berlin. The matter concerns the payment of coupons where both London and German banks act as the agents for the same loan. There are many cases where an issue of bonds has been made in London and other centres simultaneously, where the same bonds are good delivery in more than one country and where the coupons can be cashed in London and one or more other financial centres. Some of the Chinese bonds come within this category, and bonds which were originally issued in Germany are now in British hands, but the holders of the latter are now faced with the difficulty of cashing their coupons in London.

Two Chinese loans at present are affected as regards the payment of coupons on bonds originally issued in Germany. These are the Four and a Half per cent. Gold loan of 1898 for £16,000,000, of which £8,000,000 was issued in London by the Hongkong and Shanghai Bank and £8,000,000 in Germany by the Deutsch-Asiatic Bank, and the Five per cent. Gold loan of 1896 for £16,000,000, which was also equally divided between England and Germany. The money for the payment of the coupons on these is handed over by the Chinese Government in equal proportions to the representatives of the two Banks in China in monthly instalments. The next coupon on the 1898 loan falls due on 1st September and that on the 1896 loan on 1st October, and the monthly instalments for these coupons have already been forwarded by the Banks' representatives in China, so that one half of the money has gone to Berlin and one half has come to London. In the ordinary way the two Banks will cash the coupons of either the London or Berlin issue and settle up with each other at the end of the operation, according to which has paid the larger amount. Now that it is impossible for transactions between Berlin and London to be carried out, however, there is no means of the two Banks making a settlement with one another regarding the balance of coupon money, and no forecast can be made as to when the old status can be resumed. In these circumstances, the Hongkong and Shanghai Bank will pay the coupons on the English issue for which its half share of the monthly instalments paid by China is strictly intended, but it will not pay the German bond coupons, the money for which is in Berlin.

The query has been put as to how the Hongkong and Shanghai Bank can distinguish the different bonds. The answer to this is that there are some differences in the matter of signatures on the bonds, but the principal guide is afforded by the numbers. Below we give the numbers of the bonds of the English issues and the German issues of the 1898 and the 1896 loans, so that holders will be able to tell whether their coupons will be paid by the Hongkong and Shanghai Bank or not:—

CHINESE 4½ PER CENT. GOLD LOAN OF 1898

Nos. of Bonds of the English Issue.

£25 Bonds	A 1 to 1500	inclusive.
£50 „	B 1 to 1500	„
£100 „	C 1 to 66875	„
£500 „	D 1 to 2400	„

Nos. of Bonds of the German Issue.

£25 Bonds	A 1501 to 30000	inclusive.
£50 „	B 1501 to 60000	„
£100 „	C 66876 to 110000	„
£500 „	D 2401 to 2500	„

CHINESE FIVE PER CENT. GOLD LOAN OF 1896.

Nos. of Bonds of the English Issue.

£25 Bonds	A 1 to 6260 & 25061 to 28800	inclusive.
£50 „	B 1 to 12500 & 50001 to 57500	„
£100 „	C 1 to 37500 & 62501 to 85000	„
£500 „	D 1 to 937 & 1248 to 1810	„

Nos. of Bonds of the German Issue.

£25 Bonds	A 6261 to 25060 & 28801 to 40000	„
£50 „	B 12501 to 50000 & 57501 to 80000	„
£100 „	C 37501 to 62500 & 85001 to 100000	„
£50 „	D 938 to 1247 & 1811 to 2000	„

Efforts are being made whereby some arrangement may be made so that the holders in this country of German issue bonds may receive their coupon money on the above two loans and other issues the interest on which will fall due at later dates. As the money is originally handed over in China, it would seem that the difficulties, although no doubt great, are not insuperable, but the particulars we have given set out the position as it stands at present.

Another bond issue which is affected in the same way as the Chinese loans mentioned is the Royal Siamese Government Four and a Half per cent. Sterling loan of 1907. This loan was issued in London, Paris and Berlin, and the coupons are payable on 1st March and 1st September. The numbers of the bonds of the German issue are as follows:—

£100 bonds... ... ... Nos. 11,251 to 15,000 inclusive.
£20 bonds... ... ... Nos. 71,251 to 90,000 inclusive.

The coupons of the bonds of these German issues will not be paid in London at present at least, but the coupons on bonds of other numbers, whether of the English or French issue, will be cashed here as usual.—*Financial News.*

CHINESE BUSINESS METHODS

The returns of the gross trade of Shanghai in 1913 show an increase of no less than 43,747,057 Haikuan taels, or £5,842,337, over 1912. The revenue collected by the Customs shows an increase over 1912 of nearly £450,000, while it exceeds the previous record in 1906 by over £225,000. At the same time, the share of revenue claimed by each flag has undergone little change. Re-exports have increased by £2,654,731, and the net trade returns show an increase of £3,187,606. No satisfactory explanation (remarks Sir E. Fraser, the British Consul-General) has been offered of this phenomenal advance in trade return figures in a year which appears to have been stigmatised on most sides as bad for business, and in which external conditions invite the same conclusion. The hopes inspired by the good spring trade induced merchants to lay down large stocks of hardware and machinery in the expectation of continued prosperity, with the result that these were considerably larger than normal at the close of the year. 1913 was a particularly lean year as regards contracts for machinery, although the introduction of electric lighting into this part of China made some further progress, and several installations, mostly of German origin, were imported for erection in the neighbourhood.

The Chinese nowadays are constantly endeavouring to obtain machinery on extended terms of payment, and offer only the flimsiest security. They appear to be of opinion that suppliers of machinery should be ready and willing not only to supply machinery at net cash prices on extended terms of payment, but, in addition, to provide the working capital for the industrial undertaking they may have in view. In addition to this, they ask for heavy commissions for the privilege of allowing the foreigner to place them in funds. Such conditions are not reasonable, and although a few such contracts are undertaken by speculative firms, the representatives of British manufacturers as a rule are adverse to business on these lines. A considerable number of orders for railway material have been secured by British manufacturers, but it is to be noticed that the American competition for freight cars is an increasing one.

NEW POST OFFICE BUILDING AT MANILA

The Government of the Philippine Islands proposes to erect in the near future a new post-office building to cost $375,000. The building will be located near the Botanical Gardens overlooking Bagumbayan drive. It will be constructed of reinforced concrete and conform to the Burnham plans for beautifying the city. The post-office work room or mailing department will be 100 by 200 feet. The plan for the new structure, drawn by City Engineer Robinson, has been approved by Governor General Harrison and Secretary Riggs. The money for the new building will be made available out of the funds of the Postal Savings Bank. At present these funds amount to $1,450,000, of which about $400,000 is invested in real-estate loans. Of the balance not needed for current business, $650,000 is invested in the bonds of the city of Manila, Manila Railroad and the Philippine Railway, and $390,000 is deposited with the local banks, drawing 3½ per cent. interest. It is proposed to make the necessary funds available from these surpluses.

SHANGHAI MUNICIPAL COUNCIL BUILDINGS

The Shanghai Municipal Council has accepted the tender of Mr. Yue Chang-tai for building the new Municipal Central offices in artificial stone for the sum of Tls. 599,850. The Council, however, reserves the right to substitute granite for artificial stone as a facing for the building at any time within six months from October 16, 1914 at a price to be agreed upon between the Council and the contractor.

Following are the tenders received:—

	A. Granite	B. Artificial Stone
Wong Kor Sung	Tls. 1,050,000	Tls. 880,000
Sing Tai	995,000	860,000
S. Quai Ling	989,400	882,500
Lee Hop Shun	987,000	855,000
Yao Sing Kee	973,890	862,315
Hong Mow Kee	936,500	796,500
Chung Yeh Zung	928,500	788,300
Joe Ming Kee	909,500	769,500
Yue Chang Tai	879,500	599,850
Kaung Yue Kee	869,500	689,500
Sin Jin Kee	839,500	699,500

TOBACCO IN CHINA

In his report on the trade of Chefoo for the year 1913 Mr. Consul Willis says, with regard to imports of tobacco, that the contest between the British-American Tobacco Co.'s cheap products and the Japanese manufacturers is as keen as ever. The experiment of the British American Co. in growing tobacco in the neighbourhood of Wei-Hai-Wei, which was commenced about five years ago, is apparently proving a success. The native farmers are being encouraged by the company to grow tobacco, and it is interesting to note that the Chinese there hold their own against modern methods of culture.

ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

RAILWAYS

Kowloon-Canton Railway.—In presenting the Supply Bill, 1914, to the Hongkong Legislative Council the Governor said in reference to the Kowloon-Canton Railway:—The Estimate of Revenue and Expenditure for 1915 is as follows—Earnings $435,000 and working expenses $323,455, leaving a balance of $112,145 net profit. Compared with the estimate for the current year this shows an increase of $10,754. The experiment of running night trains has been tried during this year, but has not proved successful. The deficit to be made up from General Revenue is $458,510 as against $469,264 last year. The following are the principal items of increase:—"Repairs of Station Buildings, etc.," $2,920. An Assistant Locomotive Superintendent, $3,397. This is a new post, approved by the Secretary of State, which has been rendered necessary by the increase in the number of locomotives. Coal shows an increase of $18,800 due to the rise in price. Oil, tallow and other stores are estimated to cost $3,100 more than last year. This estimate is based on the actual expenditure of 1913 and the revised estimate for the current year. "Materials, maintenance and renewals of Locomotive Engines" is increased by $8,348 to provide for increased repairs next year, as it has been impossible to spare the engines during the current year for this purpose. Three new locomotives will be available next year, and the old ones will then have a thorough overhaul. Under "Repairs and renewals of coaching vehicles" the items wages, power and materials have been increased by $2,265, $1,238 and $2,740 respectively. A new printing machine at a cost of $3,000 has been provided for and a sum of $1,000 is provided for hire of 1st and 2nd class coaches from the Chinese Section for week-end traffic. The arrival of the new rolling stock will obviate this expenditure in future. A post of "Inspector of Station Accounts" has been created at a salary of $2,400. A sum of $2,500 has been entered for house allowances pending the erection of quarters for the European Subordinate Officers. It is proposed to build quarters next year, which will be occupied free of rent.

Hu-Hang-Yung Line.—Mr. M. Y. Chung, Managing Director of the Shanghai-Hangchow-Ningpo or Hu-Hang-Yung Railway announces the following appointments of Heads of Departments of the said Railway with effect from October 23, 1914, in conjunction with their respective co-ordinate appointments in the Shanghai-Nanking Railway service:—

Mr. A. C. Clear, M. Inst. C.E., as Engineer-in-Chief.
,, H. Middleton as Chief Accountant.
,, J. D. Read as Acting Traffic Manager.
,, E. J. Dunstan, M.I.Mech.E., as Locomotive Superintendent.

Kaifeng-Hsuchowfu Line.—A correspondent wrote from Suichow on September 25:—Apropos of several comments seen from time to time as to whether the construction work on the Kaifeng-Hsuchowfu railroad was at a standstill, the following information may be of interest. I recently passed through Kueiteh and had a talk with M. Bernhard, in charge of the district. The engineers who had been withdrawn for the war were being replaced and work was progressing, he said. Asked as to what effect the recent rains would have on the work he said the Hsuchow end was affected as some twenty *li* of grading was under water. Going down the river to Shanghai recently I had a talk with a Belgian from Chengchow, who informed me that the steel for this section is now in Hankow. We may not be able to use the road this year as was formerly reported, but, as M. Bernhard remarked, contracts must be met and they apparently call for an early completion of the work.

Swatow-Chaochowfu Railway.—Passenger receipts for 1913 are reported to have increased about 20 per cent. over 1912, but freight receipts continued to be insignificant. There were no improvements to the line nor any additions made to the rolling stock. Reports have been current that the line is to be extended, but not during 1914.

Shanghai-Nanking Railway.—The following figures of traffic returns (approximately) for the week ended September 19, are issued by the Shanghai-Nanking Railway:—

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	48,806	8,798	57,604
1913....	47,991	9,046	57,037
Increase.	815	—	567
Decrease	—	248	—

For 12 weeks.

Year.	Passengers.	Goods & Sundries	Total
	$	$	$
1914....	513,500	124,360	637,860
1913....	436,070	88,456	524,526
Increase.	77,430	35,904	113,334
Decrease	—	—	—

Week ended September 26.

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	42,298	8,277	50,575
1913....	55,257	10,838	66,095
Increase.	—	—	—
Decrease	12,959	2,561	15,520

For 13 weeks.

Year.	Passengers.	Goods & Sundries.	Total.
	$	$	$
1914....	555,798	132,637	688,435
1913....	491,327	99,294	590,621
Increase.	64,471	33,343	97,814
Decrease	—	—	—

Week ended October 3

Year.	Passengers.	Goods & Sundries	Total for the week.
	$	$	$
1914....	51,242	9,248	60,490
1913....	55,911	9,132	65,043
Increase.	—	—	—
Decrease	4,669	116	4,553

For 14 weeks.

Year.	Passengers.	Goods & Sundries	Total
	$	$	$
1914....	607,040	141,885	748,925
1913....	547,238	108,426	655,664
Increase.	59,802	33,459	93,261
Decrease	—	—	—

Week ended October 10

Year.	Passengers.	Goods & Sundries.	Total for the week.
	$	$	$
1914....	51,414	9,562	60,976
1913....	58,639	10,798	69,437
Increase.	—	—	—
Decrease	7,225	1,236	8,461

For 15 weeks.

Year.	Passengers.	Goods & Sundries	Total for the week.
	$	$	$
1914....	658,454	151,447	809,901
1913....	605,877	119,224	725,101
Increase.	52,577	32,223	84,800
Decrease	—	—	—

Light Railways Chartered:—Charters have been granted by the Imperial Japanese Railway Board to the Johan Light Railway Company for the laying of a steam light railway with a length of 7.66 miles between Horiye and Matsushima, Itano-gun, Tokushima prefecture, with a capital of 350,000 yen, and to the Oita Light Railway Company for the construction of a steam light railway with a length of 12.20 miles, which will cost 1,600,000 yen, between Sasaguri and Iidzuka, Oita prefecture.

Charters have also been granted for four light railways, as follows: Katori Railway Co. 7-mile line, Omigawa to Saware, cost $165,000; Hokuso Railway Co., 20-mile line, Kinoshita to Urayasu, capital $500,000; Tobim Light Railway Co., 11-mile line, Imbe to Toyomura, cost $190,000; Ushimado Light Railway Co., 8-mile line, from terminus of last-named railway to Ushimado, cost $185,000.

South Manchuria Railway.—The first locomotive of standard gauge to be manufactured by the Japanese has been turned out by the South Manchuria Railway Workshops at Shahokou. The Workshops adopted the superior points in locomotives of English and American manufacture. The locomotive is fitted up with the superheat steam appliances of the most up-to-date pattern, by which means a saving of coal by about 20 per cent. can be attained. The work of construction was taken in hand last February and the first standard locomotive was finished on September 21. Recently a trial traction run was made at Dairen with a train of goods cars. The engine belongs to what is technically known as the Consolidation type, and has larger dimensions by 20 per cent. than the largest of its class in the Company's possession.

Five more of the same type are now in course of construction and will be completed by next February. The whole cost for one locomotive is said to be less than Y40,000 which sum is several thousand yen cheaper than what will be required for one of foreign make.

The Workshops have also taken in hand six locomotives ordered by the Chosen Railway Administration. They are to be built on a special design befitting them for service over the Seoul-Wonsan line which, in its major part, has a gradient of 1/40.

New Railway Station.—Plans are being made for new station buildings for the Siamese Southern Railway at Bangkok Noi. This is to provide for the increased traffic

which is expected on completion of the extension of this railway, the length of which when completed will be about 813 miles. The line is now open to traffic from Petchaburi to Prang, about 147 miles.

It is expected that the line as far as Singora will be opened for traffic in 1916. The construction of this line was started in 1909 at three places, namely, Petchaburi, Singora, and Prang, and at that time it was hoped that the whole line would be ready for traffic in 1915.

Siamese Railway Orders.—At the offices of the Royal Siamese State Railways, Southern Line, tenders were opened for the supply of 11,200 metric tons of steel rails and 50,000 pairs of fishplates, 150,000 bearing plates, 290,000 bolts and nuts, 200,000 spring washers, and 1,450,000 rail spikes. There were 4 tenderers for steel rail and 18 for the permanent-way accessories.

The tender of Schleif Trinks & Co. (Ltd.), representing the Carnegie Steel Works of America, was accepted for 11,200 tons of rails. The price, c. i. f. Singora, was £7 4s 6d. ($35.16) per ton, or a total of £80,920 ($393,797). The Bangkok agents of the successful tenderers were Louis T. Leonowens (Ltd.).

For permanent-way accessories the tender accepted was that of the Societe Anonyme Laminoirs et Boulonneries du Ruan, Monceau sur Sambre, Belgium. The total price, f. o. b. Antwerp, was £9,863 3s ($47,999).

The bridge over the River Mee Yom having been finished, another section of the Northern Railway from Pak Ta to Ban Pin was opened for traffic on June 15, 1914.

The Kedah Railway.—The following is from the annual report on Kedah for the year ended November 30, 1913:—The Railway Administration, which had started work upon the Bukit Mertajam-Alor Star line in October of the preceding year, obtained complete possession of the land required for the line on February 1, it is reported. Work has been carried out with great energy throughout the year. Construction trains are running for a distance of fifteen miles at the southern end and ten miles at the northern end. It is expected that the entire section, which is 56 miles long, will be open for traffic in 1915. The much hoped for extension of the line from Alor Star to Perlis and thence to the Singora frontier was decided upon at the end of the year under review. The line will connect with the railway system of Southern Siam at the Singora frontier, and will thus form the link that will join up the Siamese Royal Railways with the Federated Malay States Railways, and afford through railway communication between Bangkok and Penang. In addition to bringing Bangkok many days nearer to Europe for passengers and mails, this railway will "be the making of" Kedah and Perlis, and will, it is hoped, be of the greatest benefit to the development of the Siamese provinces to the north of Kedah.

The Manila Railroad Co.—This Co. has just opened a new branch line between the municipalities of Santa Ana and Arayat, in the Province of Pampanga. The railway runs through a rich agricultural district devoted largely to sugar cane. Heretofore the crops of the region have been transported to market with great difficulty and expense. The new line should greatly enhance the wealth of the Province, as increased production always follows better facilities for marketing in such regions of the Philippines.

Tram Lines.—Serious plans are on foot for laying tram lines in eastern Java by the State railways, as, for instance, a line from Phoreton to Besoeki. State railway officials are busily engaged in surveying work. It is said to be the intention to extend the Pandji line and run a tram across the Genteng district (Banjoewangi). A tram line connecting with a few coffee estates is also under consideration.

British North Borneo Railway.—At the half yearly meeting of the British North Borneo Company held in London on July 14 the Chairman said in the course of his speech:—With regard to the railway, steady progress continues to be made. The increase in the receipts is very satisfactory, seeing that it maintains the average increase shown in the last five years. Between 1909 and 1913 the receipts increased by £13,653, which is equal to an average annual increase of £3,413. In other words, the railway receipts have increased in four years by 125 per cent. On the other hand, the railway expenditure increased between 1909 and 1913 by £11,675, or an increase in the four years of 74 per cent. The increase of £5,500 in the expenditure of 1913 over the expenditure of 1912 is mainly due to the fact that the number of locomotives, carriages, and wagons has been considerably increased, and also owing to the fact that a much more efficient and punctual service of trains has been maintained. Both receipts and expenditure have been adversely affected by the damage by floods to the bridge over the Papar River, this bridge having been twice during the year partially washed away. Given a reasonable immunity from such accidents in the future, we have no doubt that the results will be much more satisfactory. The reconstruction work being carried out will effect, when completed, a considerable decrease in working expenditure, and should bring it at least down to equality with the receipts, and it is hoped that the latter may even show a balance. The relaying of the main line will be a great improvement and should conduce to more economical working of the line in future, added to which the wear and tear on rolling stock and on the track itself should be appreciably less. The reconstruction is progressing very satisfactorily under the able supervision of the general manager, Mr. Watson. It has been a costly business, but, as I have repeatedly told you, this reconstruction was absolutely necessary, for the line—which was originally a pioneer line—was literally crumbling to pieces and unless a large expenditure was incurred the bridges especially—which were of a temporary nature—would have fallen to pieces, and such of the line as remained would have been practically useless. Up to the end of 1913 we have expended about £167,000 in reconstruction, and it is estimated that a further expenditure of about £40,000 will probably be necessary. The policy of constructing the railway in the first instance has been questioned, but you will remember that if it had not been for the existence of the railway we could not have induced rubber companies to expend £2,000,000 and £3,000,000 in the development of the country. But whatever views may be held on this question, I do not think any one would advise the abandonment of the line.

Moreover, we see every prospect of its proving remunerative in the future, and with this view we are about to undertake its extension for about 20 miles from Jesselton in a northern direction to Tuaran. The Governor and Mr. Watson, the railway manager, have very strongly recommended this extension. They point out that the line will pass through a comparatively rich part of the country, where there is a large native population, who would naturally use the line for transporting their produce to the coast. They further point out that the extension should prove immediately remunerative, as a considerable passenger and goods traffic may be expected from the outset, and that it will materially benefit the port and town of Jesselton. Tuaran is an important rice-growing district, but at present the difficulties and expense of transport are so great that it does not pay the native cultivators to grow more rice than is sufficient for their own needs. The extension of the line to Tuaran will pave the way for further extension in the not very remote future through the Tempasuk district to Kota Belud, and possibly on to Maruda Bay. The Court have accordingly authorized the Governor to take the first steps towards the commencement of this important work. The Governor estimates the cost at roughly speaking, £62,000, which works out at a little over £3,000 per mile—a very moderate outlay; but against this must be placed the £25,000 the cost of the road which I stated last year would be constructed and which, of course, would have yielded no direct revenue. I may take this opportunity of stating that in Mr. Watson we have a general manager of the highest standing. From the outset we have had every reason to be satisfied with his work, which meets with nothing but praise from all sides.

South Siberian Railroad Concession.—The Second Department of the Russian Government Council has expressed itself in favor of granting the concession for the South Siberian Railroad to private capital because it is considered doubtful whether the Government would undertake the work. It has been proposed to give the concession to a company backed by British capital. The conditions are not yet decided.

Experiments with All-steel Cars in India.—All steel cars are being experimented with on several railway lines in India. Other lines probably will undertake experiments or await the results of the experiments of lines that now have the matter under consideration.

Metal freight cars have long been in use in India, but passenger cars are usually built of teakwood resting on steel underframes. Owing to the intense heat there, and in some cases the great changes in temperature through which cars pass, the wood warps, swells, or shrinks, and joints are affected. This causes a certain swaying of the body and throws doors and windows out of plumb, causing more or less jambing. The element of danger to life is also being considered.

The wood of which the cars are made has been cheap in India but with the rise in the price of teak and the cheapening of steel the of use the latter has become possible.

Kasara Railway Tunnel near Bombay.—A railway tunnel 1,507 feet in length is now being constructed for the Great Indian Peninsular Railway in the Western Ghats about 100 miles from Bombay. The contractors are Pauling & Co., Outram Road, Bombay, who began work on the tunnel by machine drills on December 6, 1913. To expedite the work two shafts, one of 101 feet and the other of 89 feet, were sunk. The headings met in July 8 of this year, construction having progressed at the rate of 215 feet per month. It is expected that the work will be completed in July, 1915. The tunnel is being worked out on the Belgian system—by opening out the top section first, inserting the arching where necessary, and taking the lower part out subsequent to formation. The tunnel will render unnecessary a reversing station now required on account of heavy grades.

ELECTRIC LIGHT AND TRACTION

Vigan Waterworks and Electric Light Plant.—Construction has been started in the municipality of Vigan, in Ilocos Sur, on a new water system and a new electric lighting plant. The waterworks plant is to be the property of the municipality, which is constructing it, while the electric lighting plant is to be privately owned and represents principally Filipino investments. It is expected that both plants will be opened by December.

Electrical Development in Korea.—An electrical company in New Wiju has recently

commenced operations, while Okura & Company are to extend the service of their plant at Shinanju. The plant now supplies power to the gold mines of the Oriental Consolidated Mining Co., at Unsan. The Korean Government is investigating the prospects of developing hydro electric plants for the application of electric power to industrial establishments.

Japan.—The proposed extension of the Odawara Electric Railway to Hakone hot springs, is being revived, and the directors have decided to start construction within a few months; estimated cost $650,000.

Swatow Electric Light Co.—It is reported that the Swatow Kaiming Electric Light Co. had a successful year. The number of lights was increased by about 1,000 and now totals 9,000 or thereabouts. From the beginning of 1913 the cost of electric current was increased by 25 per cent.

Kongmun Electric Light.—A Hongkong electrical firm has obtained the contract for supplying machinery for an electric-light plant at Kongmun, Kwangtung Province, which will cost about $5,200 gold. The engines are of Swedish manufacture and the other parts are German. The monopoly for furnishing electric current at Kongmun will soon expire, and the new company will take over this monopoly as soon as its plant is ready. The same Hongkong company has already furnished the equipment for plants at San Choung, Sunning district, and also at Sunning City, the former costing about $4,200 gold and the latter $7,250 gold. The cost of erecting a building of the kind required is about $400 gold.

The Chinese company holding the monopoly for Kongmun and the other two companies propose to lay lines to the smaller villages, and in this way increase very considerably the number of users. The cost for a 16-candle-power light per month will be about 40 cents gold and, as is customary, a substantial reduction will be made to establishments using a considerable number of lights.

Hongkong Tramways.—The tenth year of the Hongkong tramway system just closed has been the most successful year in the history of the concern, according to the reports presented the company at its annual meeting. The last year was somewhat better than the previous year not only in actual returns, but in the improvements made in the system and in building up its reserves. The concern now is paying a good return upon the investment and is increasing its value in every way. It is now operated largely upon the American system of fares and general management.

The history of the company is of special significance in the development of such a business in the Far East. Hongkong's topography—a small island composed almost entirely of a range of hills with steep slopes—offers little opportunity for the development of a street-car system. The system was inaugurated in 1904 in the establishment of a short line along the water front designed to serve crowds of people passing between especially thickly settled but rather widely separated Chinese districts and also designed to serve workmen employed at certain of the larger industrial establishments of the port.

The problem to be solved related not only to the ability and success of the company to carry large numbers of people at very low fares consistent with the paying ability of the Chinese workmen expected to patronize the road, but also represented competition with jinrickshas and sedan chairs, such means of transport largely serving the foreign and well-to-do Chinese population but also serving a considerable portion of the middle-class Chinese people. The adjustment of fares to meet this competition and come within the reach of the paying power of the Chinese was a very delicate matter. The first fares established provided for three classes and for zone or sectional fares, namely, 10 cents local currency for first-class fares, 8 cents for second-class fare, and 5 cents for third class fare, all within certain fixed limits, depending upon the length of the ride, the fares to be increased 50 and 100 per cent for additional rides within other fixed limits. There were other and even lower fares for particular classes and within certain zones.

Not only because of the innate difficulty of managing so many varying fares and fare districts but also because of the difficulties growing out of varying values of Chinese and Hongkong silver and copper coinage, it was early perceived that simplification was necessary. The first innovation was a removal of the zone limits and the payment of the single fare for all distances upon the main line of the system. The second was the abolishment of the second-class fare. The service now provides for a 10-cent fare (local currency), equal to about 4.7 cents gold at present exchange, as first-class fare, which represents the service usually taken by Europeans and well-to-do Chinese, and a third-class fare of 5 cents local currency, which represents the service usually taken by the mass of Chinese, Indian, and other Asiatic patrons. This simplification of fares has been of immense advantage to the public and has resulted in or contributed to the result of an immense increase in the use of first-class accommodations.

Until within the past four years the trams were used comparatively little by Europeans, who usually preferred the 'ricksha except for long distances and special trips. For medium distances the 'ricksha and car fare runs about the same; for long distances the cars are cheaper, and for short distances the 'rickshas are cheaper. As a result of the increasing insolence and laziness of 'ricksha men, however, and partly because of the numerous 'ricksha accidents, and also as a result of improved service of the tramways, the latter are becoming quite popular among foreigners. It is curious to note, however, that while the business of the tramways has thus increased materially the number of 'rickshas also has increased, the number licensed in the colony at the present time being something over 1,500 as compared with about 800 six years ago.

Electrical Standardization in China.—There are at present no recognized standards of electrical supply in China. In some instances direct current is supplied; in others, alternating. There are different phases, frequencies, and voltages. The Engineering Society of China, however, is working with a view to the standardization of the supply, to be followed by some practical and effective plan for the standardization of the materials used in this line. A committee appointed to consider the subject has arrived at the following recommendations and decisions, which have been circulated as widely as possible in Europe and America in order to obtain free and valuable discussions and suggestions:

1. That generation and distribution generally shall be on 3-phase system at 50 or 60 cycles per second.

2. That distribution shall be carried out generally on the 4-wire 3-phase system with grounded neutral at a pressure of 250 volts between 1-phase and neutral, i.e., 440 volts (approximately) between phases.

3. That the standard pressure for domestic lighting and similar supply shall be 250 volts.

4. That when it is not desirable or economical to use a 4-wire 3-phase supply, then a 3-wire system with neutral grounded or a 2-wire system with one side grounded shall be adopted; in all cases the pressure to ground shall be 250 volts.

5. That the use of direct-current systems shall be discouraged and they shall not be allowed for systems involving either over 50 kilowatts in capacity or having feeder of over one-half mile in length.

6. That no fuses or switches shall be allowed in the neutral wire.

7. That where direct-current systems are essential the generation and distribution shall be on the 3-wire system at 500 volts between outers, the neutral being grounded.

8. That the following pressures shall be considered as standards for high-tension transmission: 2,200 volts, 3,300 volts, 6,600 volts. Pressures above 6,600 volts to be as required by local and other conditions.

Shanghai Tramways.—The following is the traffic return of the Shanghai Tramways (Foreign Settlement) for the week ended September 23, 1914, with figures for the corresponding week last year:—

	1914. $	1913. $
Gross receipts	24,603.45	25,113.20
Loss by currency depreciation.	6,132.64	5,645.10
Effective Receipts . . .	18,470.81	19,468.10
Percentage of loss by currency depreciation . .	26.71	23.66
Passengers carried . . .	1,070,315	1,051.249
Car miles run	60,185	57.337

Week ended September 30.

	1914. $	1913. $
Gross receipts	25,032.38	25,113.20
Loss by currency depreciation	6,442.66	5,645.10
Effective receipts . . .	18,589.72	19,468.10
Percentage of loss by currency depreciation . .	27.57	23.66
Passengers carried . .	1,113.220	1.051.240
Car miles run	50.390	57,337

Week ended October 7.

	1914. $	1913. $
Gross receipts	27,310.72	25,978.20
Loss by currency depreciation.	7,238.18	5,859.48
Effective receipts . . .	20,072.54	20,118.72
Percentage of loss by currency depreciation . .	28.02	23.65
Passengers carried. . .	1,225,950	1,083,399
Car miles run	60,041	58,409

Week ended October 14.

	1914. $	1913. $
Gross receipts	26,153.72	26,330.23
Loss by currency depreciation.	6,838.55	5,896,08
Effective receipts . . .	19,315.17	20,461.15
Percentage of loss by currency depreciation . .	27.82	23.34
Passengers carried. . .	1,163,588	1,069,008
Car miles run	59,672	59,637

SHIPBUILDING AND STEAMSHIPS

Japanese European Liners.—The *Fushimi Maru*, launched at Nagasaki on June 28, 1914, is being built for the Nippon Yusen Kaisha for its European Line from Yokohama to London via the Suez Canal. It will be a steel twin-screw steamer of 11,800 tons gross register, with triple-expansion engines and the contract speed calls for 16¼ knots per hour. The keel was laid in May, 1913, and the vessel is to be ready for sea on November 17, 1914.

New Steamers for Szechuan.—From telegraphic information, the Nicholas Tsu Engineering and Shipbuilding Works of Shanghai learns that the steamer *Chingyu*, which was built for the Juiching Company of Szechuan, and which left Shanghai on September 19, safely arrived at Chungking on October

16. Another light-draft steamer named *Lichuan*, built for the Szechuan Railway Administration, left Shanghai on September 30 and arrived at Ichang on October 14; she was to proceed to Chungking a day or two later.

The Nicholas Tsu Works have built another steamer called the *Yuhang* to ply between Changsha and Hankow. The last boat will shortly be transferred to the run between Ichang and Chungking, when there will be altogether four such light-draft boats built at the Nicholas Tsu Works, trading in Szechuan waters.

Kiangnan Dockyard.—The three icebreakers which have been built by the Kiangnan Dock, Shanghai, have been completed and two of them, the *Marksman* and *Engineer*, left for Vladivostok, proceeding under their own steam. The third vessel, the *Meiling*, which is intended for service in Chinwangtao harbor for the Kailan Mining Administration, will shortly be handed over.

New Steamship Company.—A new Japanese shipping company (South Sea Mail Steamer Co., Ltd.), capital $747,000, will shortly be organized in Tokyo. Its promoters have been carrying on a steamship service between Japan and the South Pacific with $75,000 annual State aid. Complying with the request of the Communications Department, the above company is organized and will shortly inaugurate the service. It is understood that the Diet will be asked to double the subsidy, and that the company will buy new craft.

New Chinese Steamship Co.—This has been organized at Antung by the Chamber of Commerce and leading merchants of the port, under the name of the Kwang Yi Co. Through the Ching Kee Co., of Chefoo, it purchased at 114,000 taels (about $75,200) a Norwegian steamer of 1,950 tons, which is named the *Tong Lee*. An additional 6,000 taels (about $3,900) was expended on repairs made at Dairen after delivery of the steamer. It is the plan of this company to open an Antung-Shanghai service.

New Nippon Yusen Kaisha Liner.—The latest addition to the Nippon Yusen Kaisha fleet is the Suwa Maru, a vessel of 12,000 tons. She is the largest vessel built for the company's European route. The Suwa is equipped with the latest appliances to give facilities and convenience to the passengers. All the cabins are beautifully carpeted, and furnished with every requisite to each berth, chests of drawers, wardrobes with long mirrors in front, etc., each berth being fitted with an electric lamp, in addition to the customary ceiling lamp. Special care has been taken to meet all requirements of tropical climates. Every cabin is equipped with electric fans, and is unusually roomy. A number of the cabins are equipped with two berths placed on a level at either end of the room instead of one over the other as is customary, thus removing the usual inconvenience of selecting "upper or lower berth." A luxurious suite of rooms is on the promenade deck, consisting of a sitting room, a bed room (to be booked together or separately as the case may be) and a bath-room with lavatory, the bed room being provided with Neptune's broad silver cot berth. The sitting room is decorated with beautiful sculpture in wood, and is also furnished with sleeping berths which are, however, so designed that all evidence of their being such is concealed when not in use. All the fittings and furniture in these rooms are of the best artistic design and taste. Ten of the cabins are single berthed and are specially fitted for those desiring privacy. The dimensions of the steamer are as follows: gross tonnage 12,000 tons, length 525 feet, beam 63 feet 5 inches, depth 37 feet 6 inches, displacement 21,000 tons, speed 17 knots, classed 100 A. I. at Lloyd's. She can accommodate 121 first class passengers, 60 second class passengers and 190 steerage passengers.

The Suwa Maru was built at the Mitsu Bishi yards at Nagasaki.

WATERWORKS

Loan for Extension of Waterworks in Karachi.—The municipality of Karachi, India, has issued notice of a $206,500 20-year loan for extending the city waterworks. The loan has the sanction of the Government of India.

Manufacturers of machinery and tools used in city waterworks and for construction purposes should communicate with Harchandrai Vishindas, Esq., president Karachi Municipality, Karachi, Sind, India.

Bangkok Waterworks.—The final stage in the construction of the Bangkok waterworks has now been reached with installation of the hydrants and street fountains, which have recently arrived from Europe. It was expected that the water will be turned into the mains in September, and when the connecting up with buildings has started there will be a large demand for all sorts of plumbing material, which all must be supplied from abroad, as such material is not manufactured locally.

Hongkong Additional Waterworks.—The problem of providing a sufficient supply of water for the increasing population of Hongkong has been a serious one, and several times there has been almost a water famine, due to the shortness of the rainy season. The Government has been engaged for a few years in devising methods whereby the supply would be ever sufficient to meet all reasonable demands and two years ago a contract was let to construct the Tytam Tuk Reservoir and the necessary pumping equipment.

The main features of the scheme will be the construction of an enormous masonry dam, 160 feet high, to impound 1,500 million gallons of water, the extension of the existing pumping station near the shore of Tytam Bay, and the provision of two sets of pumping machinery each capable of delivering 2 million gallons of water per day of 24 hours. The work will be completed in 1917. The estimated cost of this undertaking is about $1,200,000 gold. When it is completed the water storage and catchment area of the island will embrace an area of over 2,000 acres. There will still be room for a little further extension should the needs of the growing population call for it, but that is scarcely likely to arise for another 30 or 40 years; and in the event of the population of the island growing to such an enormous extent as to render the supply on the island insufficient to meet the requirements, it will always be possible to bring from the other side of the harbor as much water as may be needed.

Artesian Wells.—New artesian wells have been sunk by the Philippines Government, one at Villasis, Pangasinan, 140 feet deep and yielding a flow of 100,800 gallons a day; another at Baliwag, Bulacan, 250 feet deep and giving a flow of 86,400 gallons a day.

Increased Water Supply for Bombay.—It is anticipated that before the end of the year 1915 the city of Bombay will receive 50 million gallons of water every day as against the present daily supply of 30 million gallons; this increase being effected by the duplication of the present Tansa main bringing water to the city. This scheme, which was started about a year ago, is now more than half completed, and it claims a twofold importance, for, in addition to being one of the biggest water-supply projects carried out in India, it marks the first occasion on which huge steel pipes of the "lock-bar" type have been made in India.

Early in 1912 the hydraulic engineer to the Bombay Corporation drew up a report in which he estimated the requirements of the population that would have to be provided for at 51 million gallons per day and showed how the necessary increase could best be provided by constructing another Tansa main, as had long been proposed by the municipality. It was decided to carry out his scheme, and up to the present contracts totaling some Rs. 70 lakhs ($2,240,000) have been let for constructing the main from the headworks of the water supply to Bombay and for raising the dam at Tansa. The work of laying the new main has been simplified, owing to provision having been made in the bridges, culverts, syphon heads, and embankment at the time of construction of the works in 1890 for a second main, so that the actual pipe laying has become a comparatively straightforward task. Last year the scheme was set in motion, the first work taken in hand being widening the embankments and the preparation of the bed for the new main. The contract for raising the dam was let to Messrs. Pallonji Edalji & Son, of Bombay, for $110,000. The work included the building of nearly 1¼ million cubic feet of masonry on top of the existing dam. A start on it was made about a year ago and more than half is now completed. It is expected that the whole of the masonry work will be finished by next March.

The northern portion of the new main for 19 miles will be composed of steel pipes of 50-inch bore, and the southern portion of cast iron pipes of 48-inch bore. The contract for iron pipes was let to Turner, Hoare & Co., of Bombay, at $752,000, and several thousand tons of them have been delivered and laid. For constructing steel pipes a contract was let to Messrs. Mephan, Ferguson & Sons, of Melbourne, Australia, at $1,058,000 and they are now proceeding in Bombay with their manufacture. The scheme is being carried out with such expedition that the end of next year is considered the probable date of completion.

The total length of the new Tansa main will be about 33 miles, and from the headworks of the water supply at Tansa to the outskirts of Bombay the main will run parallel with the existing chain of pipes which bring water to the city. A journey along the new main to-day will show that good progress is being made. A bed has been prepared over the whole length of the main, and for several miles of this length pipes have been placed in position. If it were not for the fact that more than half of the length of the main will consist of steel pipes which are being manufactured on the scene of the work the new Tansa main would not be invested with more interest than that attached to the laying of any important water conduit.

The manufacture of the steel pipes is carried out in the city of Bombay through an interesting process. The pipes are made in 28-foot lengths or over twice as long as the pipes of which the present main is constructed, and are 50 inches internal diameter. These large pipes are manufactured with a minimum of labor and with the greatest of ease by the very heavy and powerful machinery in local works, in which every labor-saving appliance that the Australian manufacturers could devise has been installed.

To follow one of the large steel sheets which measure 28 feet long and 6 feet 7 inches wide, through the works will illustrate the process of manufacture The sheet is first lifted from the stack by a hydraulic crane and then passed through a set of rollers to take out any bends or buckles which it may have received in transit. After having been straightened it is passed on to a very large and powerful planing and upsetting machine. The next stage is to bend this 28-foot long sheet to a half circle, and for this purpose a set of rollers specially designed to take this long length of plate are used. The next operation is to join two of these long half circular trough-like sheets together to form a pipe, and this is where the lock-bar joint is used. This joint is made with a rolled steel bar 28 feet

long. To form a pipe the sheets are first clamped firmly together with their thickened edges in the grooves of the lock bars.

The next operation is to close down the lock bars over the thickened edge of the plate, and this is done with a powerful hydraulic press. This press is arranged to close both bars at once, and this result is obtained by having a mandril which supports the pipe inside while a ram comes up from the bottom and squeezes the bars home in the tools or dies shaped specially for this purpose, the top die being supported by the casting of the press. The force exerted by this press is 450 tons at each stroke. The dies are about a foot long, and a few inches only are done at a time, the pipe being moved through the machine till it is completed. The next operation consists of trimming the ends of the pipes, the bars and the sheets not being supplied exactly to length nor exactly square. This is accomplished with a couple of hydraulic shearing machines. The pipe is then ready to be tested before receiving its protective coating. Each pipe is filled with water and tested to 200 pounds per square inch. It is then rolled to and dipped into a steel tank, which is full of a mixture of tar and Trinidad asphaltum, which is kept at a temperature of 350° F. by furnaces which are arranged under it. The pipe is allowed to remain in this bath until it reaches the same temperature as the bath itself, and it is then hauled out and lowered into a revolving frame. While in this frame a strip of hessian cloth is laid on the pipe while it is revolving, the result being that the hessian is wound up on the pipe spirally from end to end.

The next operation is to spread more of the mixture from the tar bath on top of this hessian, thus thoroughly saturating it. A coating of sand is then thrown on the pipe, and while the pipe is cooling any roughness in the coating is smoothed down by the use of hand rollers. When cooled sufficiently for the coating to harden the pipe is rolled away ready to be taken away to be laid and jointed.

In connection with this new Tansa main, the only business which appears to have gone to the United States was the sale of about 40 tons of steel piling by the United States Steel Corporation. This piling was used in connection with the crossing of a small creek.

The Australian company which has obtained the contract for the steel pipes in connection with this main, and which has been enterprising enough to erect its own plant in Bombay for the construction of the same, will, it is anticipated, bid on future work of the same sort in India, and will always hereafter be an important factor in the international competition here in steel piping. As it receives over $1,000,000 for the pipes supplied, it apparently paid well to erect the local plant.

PUBLIC WORKS

F. M. S. Public Work.—Provision has been made in the estimates for all manner of public works, such as new roads, new bridges, waterworks, public offices, a new Malay Training College, schools, hospitals, and a State mosque at Kuala Kangsar of great architectural beauty as a lasting memorial of the reign of His Highness the Sultan of Perak.

Tientsin, New Bund.—The Chinese Maritime Customs Administration has decided to construct at Tientsin a bund of reinforced concrete in front of the customs house similar to that of the French bund. This improvement will have about 200 feet frontage, and the contract has been secured by the Syndikat Industriel et Commercial.

New Road for Amur Gold Region.—From 1910 to 1913 surveys were made for 14,033 miles of roads. The Department of Ways and Communications is working on a project for the construction of a wheel road from the village of Yakutskaia Stayba, on the Selemdja River, to Kerbinsky storehouse, on the Amgun River, a distance of 317 miles. The section to be served is the gold region of Amur Province.

The Selemdjinsky, Niman-Burea, and Amgun-Kerbinsky gold mines are the only active industries in the northwest part of Amur Province in an area of 26,100 square miles. At present these centers are connected with city centers by pack trail only, and every spring and autumn the connection is broken for two months. The construction of the new road, which will cost about $2,381,000, will keep communication open all the year.

New Antung Customs Shed.—A shed has been erected on the bund at Antung for temporary storage of cargo awaiting customs examination. Its cost was $2,875, which will be recovered by a charge of 25 cents per boat load or part thereof stored therein for a maximum of four days. A boat load is calculated on a basis of 40 tons measurement (1,600 cubic feet). When the cost of construction shall have been recovered the storage charge will be reduced to a rate sufficient to keep the shed in good repair.

This shed is not considered by the authorities as a godown (warehouse), and all goods are stored there entirely at the owner's risk.

Road and Bridge Work in the Philippines.—The Secretary of Commerce and Police has set aside $79,000 for bridge and road work throughout the islands under the provisions of act No. 2378 of the Philippine Legislature, which appropriates money for provincial public works on the condition that the various Provinces raise a proportionate part of the funds necessary, as follows: For Bayambang Bridge on the condition that the municipality of Bayambang contribute enough to complete the bridge, $12,500; for the Pagsanhan Bridge on condition that the Manila Railway Co. contribute $5,000 and the steel superstructure and that the municipality of Pagsanhan contribute enough funds to complete the bridge, $9,000; for the Balos Bridge on condition that the municipality of Iriga contribute enough funds to finish the bridge, $500; for bridges and culverts on the Niac-Indang road, $7,500; for bridges and culverts of the Nasugbu-Thy road, $12,500; for experiments with road materials by Bureau of Public Works, $9,000; for maintenance of Manila south road, $10,000; for Manila north road maintenance, $10,000; for maintenance of Bobonan-Camp 1 road, $2,500; for maintenance of Bangar-Tagudin road, $2,500.

Hongkong, Extension of the City.—A development scheme for the south side of the island of Hongkong, now before the legislative council, if carried into effect, will increase the available building area by about 200 acres and also the total tidal area between Aberdeen, Little Hongkong, and Brick Hill. The south side of the island is considered by far the coolest, and the only objection to its development has been the great cost of furnishing transportation. The population has outgrown the present limits of the city of Victoria, and the necessity of providing for immediate needs and the future has prompted the promoters to present the scheme to the Government.

On the harbor side of the island the available space for building has about been exhausted and the cost of construction has become almost prohibitive. In the Peak district the cost of building is so great that little attempt has been made to occupy the few good sites left. In Kowloon building has gone on apace in the past three years and practically all of the best sites have been covered with buildings. This scheme is designed as a partial solution of the housing problem, rents having gone up enormously within the past few years.

The Government will be obliged to spend considerable money in making the section under review inhabitable, but the nature of the land should render the work comparatively easy, if expensive. The promoters seek the sole right for 25 years to supply electricity and gas within the areas over which they have an option and also the right for the same term to run public motor cars. The Government proposes to extend the present highway from Aberdeen to Deep Water Bay, and other extensions are under consideration which will open up sections now useless because of lack of roads.

Among the chief points of the provisional agreement entered into between the Government and Dennys & Bowley, solicitors, are that should the Government approve the scheme the promotors must begin actual construction of the tramway or light railroad within one year from the date of the ordinance, and one or the other must be completed within three years. If the promoters fail to comply, the concession is forfeited. The Crown leases of the areas taken up shall be granted for 75 years, renewable for a similar period at a reassessed Crown rent. Final action of the legislative council will not be taken for some weeks.

Taiwan Public Works.—The principal public works in Taiwan, apart from harbor improvements, consist of the construction of power stations and irrigation works in Ako Prefecture, south Taiwan. Waterworks costing $55,950 were constructed at Tainan and will be continued in 1914, when it is expected this work will cost $239,000. A wall to protect the city of Taihoku from the disastrous floods that accompany typhoons when the Tansui River overflows and floods the city for a distance of over half a mile, is under construction along the east or right bank of the river and is already about half completed. The work done in 1913 cost $151,227, and it is planned to spend $161,500 in 1914. Protection walls were also built along the Dakusui River in Nanto Prefecture (south).

Singapore, Incinerating Plant.—Projects undertaken and completed by the municipality during 1913 included the completion and setting into operation of the new municipal incinerating plant at a cost of $127,000 to $136,000. The installation of the new sewerage system was begun, but the work is being carried on rather slowly. Part of the work has been sufficiently completed to allow the operation of a part of the system.

Harbin, Municipal Construction Work.—The Town Council of Harbin proposes to make a long-term loan of $2,729,500 for carrying out the following undertakings: Construction of waterworks and canals, an electric street car system, electric lighting system for the municipality, construction of a telephone line, construction of a municipal administration building, school building, hospital, veterinary hospital, a fire department, a refrigerating plant, stock yards, public park, and the reconstruction of the summer theater.

The following are the estimated amounts required: Electric tramway system and electric lighting plant, $668,750; city telephone, $125,000; market in the new town, $95,000; town schools, $167,000; municipal administration buildings, $85,500; repairing the river bank, $15,000; sanitation yard, $5,000; municipal hospital, $91,500; veterinary hospital, $20,000; fire department, premises for, $48,000; establishment of a new fire department, $20,000; fire alarms, $7,500. To this amount must be added: Municipal debts, $150,000; loss of interest during construction, $150,000; other constructions, $50,000.

Taking into consideration the loss by exchange, about $252,000, or 13 per cent., the amount of the loan required will be $1,050,000. The town council has received an offer from Gardin, Weg & Co., a banking house, whose proposal is to furnish $1,520,000 for 50 years,

at 5 per cent. interest, the issue being at 87½; the entire amount of the loan to be paid at one time, or 87 per cent. to be paid in installments covering a period not longer than 18 months. The security for the loan is the guaranty of the Chinese Eastern Railway, to be approved by the Russian Minister of Finance.

The following table shows the estimated costs, revenues, and expenditures of the various enterprises and constructions in question:

Undertakings.	Cost	Gross revenue.	Expenditures. *a*	Difference. *a*
Tramway and electric plant	$668,750	$154,500	$130,500	*b*$24,000
Telephone	125,000	50,000	41,500	*b* 8,500
Market	95,000	16,875	8,580	*b* 8,295
Municipal administration building	85,500	12,970	10,512	*b* 2,458
Municipal schools	167,000	9,600	10,688	1,088
Repairing river bank	15,000	1,586	960	*b* 626
Sanitation yard	5,000	781	670	*b* 111
Municipal hospital	82,500	....	5,280	5,280
Municipal hospital equipment ..	9,000	....	1,386	1,386
Veterinary hospital	20,000	750	2,080	1,330
Premises for the fire department ..	48,000	....	3,072	3,072
Fire department	20,000	....	2,080	2,080
Fire alarms	7,500	....	780	780
Payment of short-term loans ..	150,000	9,900	9,600	*b* 300
Loss of interest during construction	150,000	....	9,600	9,600
Other constructions	50,000	....	3,200	3,200
Total	1,698,250	256,962	240,488	72,106
Less net revenue	....	....	....	44,290
Net expenditure	....	....	....	27,816

a Including 5.4 per cent. interest on the capital and amortization of capital, with interest.

b Net revenue.

The secretary of the town council states that, upon the receipt of a satisfactory proposal, the municipality is willing to offer the above-listed undertakings and buildings as security.

MINING

Gold in Japan.—It is reported that a gold mine with a number of rich veins has been discovered in the basin of a little tributary of the river Nochibetsu in Iburi province. The deposits are said to be worth more than Y.150,000,000, the ore found containing gold at the rate of 5/100,000.

Kailan Mining Administration.—The total output of the Administration's mines for the week ended September 19 amounted to 44,305.25 tons and the sales during the same period to 43,510.51 tons.

Week ended September 26, output 45,574.08 tons, sales 47,573.01 tons.

Week ended October 3, output 45,400.58 tons, asles 56,366.59 tons.

Week ended October 10, output 45,107.52 tons, sales 47,714.81 tons.

Japan, Zinc Refining for Export.—The zinc refining industry in Japan is making continued progress. Two companies produce 400 tons a month and are now more than able to supply the home demand—about 300 tons monthly. Hence Japan is about to become a zinc exporter. The price has declined to $6.90 and $7.50 per picul (133⅓ pounds), a drop of 35 to 40 cents from January, 1913.

Philippines, Oil Indications.—It is reported that a rich oil deposit has been found at Toledo, Cebu. Some 450 gallons of the crude oil are said to have been taken, which under analysis proved of good quality. A $250,000 company is being formed to develop the deposit. Other companies are being formed to explore adjoining land. Machinery for the well has been ordered from Europe.

Oil in Sarawak.—One can gather very little information at this distance regarding the Miri, Sarawak, oil field. The following extract from the yearly report of the Resident of Miri, meager as it is, may, however, prove of interest: Information concerning the progress of the Anglo-Saxon Petroleum Co. has been received. The European section of the staff at the end of 1913 numbered 28, as compared with 21 at the end of 1912, and Chinese and other clerks 15, as compared with 7 the previous year; these numbers will be added to at an early date. Six additional wells were brought into production during the year, two having been drilled for water supply. Drilling is in progress in four more wells, while four others are being gotten ready. Eight drillers are employed.

The daily production has increased more than four times, compared with the best results obtained in 1912.

Shipping of crude oil for refining commenced in April last and at present shipping arrangements are just keeping pace with production.

New Coal-Mining Method in China.—The management of Fushun collieries started on April 6 the excavation of an open cast at Kuchentzu, Manchuria, where the coal seam is accessible at only 24 feet under ground. The seam was reached on May 28. This part of the seam may have once been beneath the river bed of the Hun. The quality of the coal on the surface was found to be rather indifferent, but deeper down an improvement in quality is expected. At the outset, an area of. about 180,000 square feet is to be cleared of the earth, etc., over the coal seam. The clearings are estimated to be about 720,000 cubic feet, and a gang of about 1,000 coolies is now kept at work for the removal of the earth, etc. Steam shovels will be used in commencing mining operations. The mining area will be extended gradually westward. This mining method has been resorted to with the object of meeting a shortage in supply which will be experienced as a sequel to the execution of the sand-flushing plan in the existing shafts and pits.

Iron Furnaces, Korea.—A new pig-iron furnace is to be erected by the Mitsu Bishi Co., at Kenjiho, near Pyeng Yang, within the next two years at an estimated cost of 5,500,000 yen ($2,750,000). It is understood that bids have been invited from various companies in England, the United States, and Germany: It is planned to erect two pig-iron furnaces, with a capacity of 150 tons each per day. The product is to go mainly to the steel works at Wakamatsu to replace the pig iron now being imported from China. The company owns both coal and iron mines in the vicinity of the proposed foundry, the iron ore from which is said to be very similar to the ore found in the Alabama mines in the United States. The men in charge of this work are supposed to favor European manufacturers, but, as the furnaces for treating the Alabama ore are of a peculiar type, it would seem that American manufacturers would be better qualified than those in Europe to produce furnaces for the Kenjiho works.

Tungsten Mines in Korea.—During the last calendar year operations were commenced in the tungsten mines discovered in the eastern part of Chosen. An average of 5 tons per month, it is reported, was shipped to Yokohama, the estimated value being $400 per ton. Numerous applications are being received for permission to work similar mines in the same section of the country. However, owing to the general scarcity of tungsten and to the probable need of such supplies as exist for the development of the iron industry in Chosen, it is reported that the authorities are at present not granting permits for such mines.

Indian Coal Output.—The chief inspector of mines in India reports the output of coal in British India during 1913 as 15,486,318 tons from the following districts: Bengal, 4,649,852; Behar and Orissa, 10,226,389; Punjab, 51,040; Assam, 270,364; Baluchistan, 52,932; Central Provinces, 235,651; Northwest Provinces, 90. In addition 600,000 tons were imported. Exports were 3,000,000 tons, leaving about 13,000,000 tons consumed in India, of which the railways took 4,500,000 tons.

Siam, Tin-Mining.—The Bangkok press reports the formation of the Nai Sok Tin Mining Co. (Ltd.), capital $55,500, which is being registered according to Siamese law. The property is in the district of Langsuen in the Siamese Malay States, and consists of 41 acres, on a hill 8 miles long and 1 mile wide.

Gold in Chosen (Korea).—The greater part of the gold bullion produced in Chosen is exported to Osaka through the agency of the Bank of Chosen for minting by the Government Mint there. The quantity of gold bullion thus disposed of is generally on the increase. To be more particular, during 1910 gold bullion 1,590 *kwan* 676.30 *momme* in weight (1 *kwan* =100 *momme*; 1 *momme*=1325 ounces) was exported and made into coins valued at 7,593,381.50 *yen*. It decreased the following year to 1,561 *kwan* 657.79 *momme*, which was made into coins valued at 7,808,288.95 *yen*, and further decreased in 1912, to 1,448 *kwan* 780.21 *momme*, valued at 7,233,828.85 *yen*. In 1913, however, it increased to 1,740 *kwan* 248.57 *momme*, and minted into coins valued at 8,700,952.85 *yen*.

As for the present year, up to June last 890 *kwan* 121.55 *momme* of gold was gathered and sent to Osaka, and 4,450,607.75 *yen* worth of coins minted from it.

Generally speaking, a greater quantity of gold is gathered in Chosen in the six months ending December than in the six months preceding. This is principally due to the weather. As above mentioned, during 1911, and 1912, the output showed some decrease, but this was of a purely temporary nature, being an outcome of a flood which greatly hindered the work of miners, and so decreased the output at Wonsan and Suan gold mines, the two large gold mines in Chosen.

In 1911, an improvement was introduced in the method of refining, and this increased the quantity of gold for use. In 1912, gold mines at Changsong, Wonsan, and Songya in North Pyongando had either new machinery installed or enlargements made. Along with this, several mining magnates in Japan, including Mr. Furukawa, Mr. Yasukawa and Mr. Fujita acquired the concession of working gold mines in Chosen and steadily began exploitation of them.

With the beginning of 1913, Unsan, Suan and Changsong gold mines showed a substantial increase in output, and by the end of the latter six months, the output broke the record hitherto maintained, with some 900 *kwan* valued at 5,000,000 *yen*. During the first six months of this year, the total quantity of gold sent to Osaka from Chosen surpassed the quantity hitherto sent during the corresponding period, the increase being some 68 *kwan* valued at 341,600 *yen*.

As lately reported, work on the gold mines at Sangju, Wiju and Sinheung was commenced some time ago, under the direct management of the Government. Some more mines are also either being prospected or worked. Under the circumstances, it is scarcely open to doubt that the output of gold in the peninsula will gradually increase.

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Coal Mining Co.'s
Chinese Engineering and Mining Co., Ltd.
The Lanchow Mining Co., Ltd.
South Manchuria Railway Co.

Coal Handling Machinery
Babcock & Wilcox Ltd.

Contractors, (General)
Bohler Bros. & Co.
Frank L. Strong
Shanghai Dock & Engineering Co. Ltd.
White & Co. Inc., J. G.

Contractors, Electrical
Shanghai Dock & Engineering Co. Ltd.
Arnhold, Karberg & Co.
Shewan Tomes & Co.
Frank L. Strong
Siemens China Electric Engineering Co.
Dick, Kerr & Co., Ltd.

Consulting Engineers
White & Co., Inc. J. G.

Cranes
Babcock & Wilcox Ltd.
Werf Gusto

Conveyors
Babcock & Wilcox Ltd.

Diving Apparatus
A. J. Morse & Son

Dredgers
Middleton & Co., Ltd.
Melchers & Co.
Priestman Bros. Ltd.
Rose, Downs & Thompson, Ltd.
Shanghai Dock & Engineering Co., Ltd
Werf Gusto.

Drying System
American Blower Co.

Economizers
Babcock & Wilcox Ltd.

Electric Lighting Plants
Andersen Meyer & Co.
Arnhold, Karberg & Co.
Fearon, Daniel & Co.
General Electric Co.
Siemens China Electric Eng. Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
Shewan, Tomes & Co.
U. S. Steel Products Co.
Western Electric Co.

Electrical Supplies
Andersen, Meyer & Co.
Arnhold, Karberg & Co.
Jardine, Matheson & Co.
Babcock & Wilcox (D. W. Bell)
Bellis & Morcom (D. W. Bell)
Fearon, Daniel & Co.
General Electric Co
Melchers & Co.
Shewan, Tomes & Co.
Siemens China Electric Eng. Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.
Western Electric Co.

Engines
Bellis & Morcom (D. W. Bell)
Shanghai Dock & Engineering Co., Ltd.
A. F. Craig & Co.

Excavators and Elevators
Priestman Bros. Ltd.
Rose, Downs & Thompson, Ltd.
Shanghai Dock & Engineering Co., Ltd.
Austin Drainage Excavator Co.

Explosives
Jardine, Matheson & Co.
Arnhold, Karberg & Co.
Rendrock Powder Co.

Fan Blowers
Drysdale & Co.

Feed Water Heaters
Babcock & Wilcox Ltd.

Food Products
Anderson & Co., W. H.

Gas Engines
Melchers & Co.
Campbell Gas Engine Co., Ltd., The

Graphite Paint
J. Dampney & Co.

High Speed Engines
Drysdale & Co.

Hose
F. Reddaway & Co., Fire Hose "Sphincter Grip," Armoured Hose, etc.

Ice Machinery
Vulcan Iron Works
Melchers & Co.

Insurance
Stevenson & Co., Ltd., W. F.

Ironfounders
A. F. Craig & Co.

Life Insurance
China Mutual Life Insurance Co., Ltd.

Locks
Yale & Towne Mfg. Co.

Locomotive Speed Indicator and Recorder
Hasler Telegraph Works.

Lubricants
Albany Lubricating Co.

Lumber Dealers
Robert Dollar Co.
Jardine, Matheson & Co.

Machinery Merchants
Andersen, Meyer & Co.
Arnhold, Karberg & Co.
Shanghai Machine Co.
Fearon, Daniel & Co.
Frank L. Strong
Schuchardt & Schutte.
Shanghai Dock & Engineering Co., Ltd.
Samuel & Co., Ltd.
Tulloch & Co.

Mechanical Rubber Goods
F. Reddaway & Co.

Mill Machinery
Rose Downs & Thompson Ltd.
Shanghai Dock & Engineering Co., Ltd.
A. F. Craig & Co., Ltd.

Mining Machinery
Melchers & Co.
Shanghai Dock & Engineering Co., Ltd.
Shewan, Tomes & Co.

Mineral Oil Plants & Machinery
A. F. Craig & Co.

Motors
Shanghai Dock & Engineering Co., Ltd.
Pratt's

Motor Tyres
F. Reddaway & Co.

Motor Launches
Shanghai Dock & Engineering Co., Ltd.

Paints Oils and Varnish
Standard Oil
Albany Lubricating Co.
F. A. Vander Loo & Co.
J. Dampney & Co.

Packings
F. Reddaway & Co.
Greene Tweed & Co.

Pulleys (Steel)
Schuchardt & Schütte
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.

Pumps
The Goulds Manufacturing Co.
Shewan, Tomes & Co.
Jardine, Matheson & Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
Joseph Evans & Sons
Worthington Pump Co.

Railroads
Chinese Government Railways
Manila Railroad Co.
South Manchuria
Southern Pacific Co.
Chosen (Korea) Railways.

Railroad Supplies
American Locomotive Co.
Andersen, Meyer & Co.
Arnhold, Karberg & Co.
Baldwin Locomotive Work.
Fearon, Daniel & Co.
Hannoversche Maschinenbau A. G. Vormals Georg Egestorff.
Henschel & Sohn.
P. Herbrand & Co.
Jardine, Matheson & Co., Ltd.
Melchers & Co.
Shewan, Tomes & Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
Tyer & Co.
U. S. Steel Products Co.
Railway Signal Co., Ltd., The
Robert Dollar Co.
Samuel & Co., Ltd.
Dick, Kerr & Co., Ltd.
Siemssen & Co.

Reinforced Concrete Construction
Shanghai Dock & Engineering Co., Ltd.
Trussed Concrete Steel Co.
U. S. Steel Products Co.

Roofing Paper
California Manila Lumber Commercial Co

Rope Manufacturers
Johnson-Pickett Rope Co.
U. S. Steel Products Co.
Ynchausti & Co.
Shewan Tomes & Co.

Ship-Chandlery
Ynchausti & Co.

Shipping Agents
Cia. General de Tabacos
Shewan, Tomes & Co.
Stevenson & Co., Ltd.

Shipbuilding and Repairs
Fiat-san Giorgio Ltd.
Tsingtauer Werft
Hongkong & Whampoa Dock Co., Ltd.
Mitsu Bishi Dock and Engineering Works
Shanghai Dock and Engineering Co., Ltd.
The Taikoo Dockyard and Engineering Company of Hongkong, Limited

Steamship Companies
Cia. General de Tabacos
Pacific Mail S. S. Co.
Ynchausti & Co.
Toyo Kisen Kaisha.

Steel Manufacturers
United States Steel Products Export Co.

Steel Works
Bohler Bros. & Co., Ltd.
U. S. Steel Products Co.

Stokers
Babcock & Wilcox Ltd.

Structural Steel
Bohler Bros. & Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.

Sugar Machinery
A. F. Craig & Co.

Superheaters
Babcock & Wilcox Ltd.

Tanks
Pacific Tank and Pipe Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.
A. F. Craig & Co.

Telephones
The Western Electric Co.

Textile Machinery
A. F. Craig & Co.

Tiles and Bricks
Green Island Cement Co., Ltd.
Chinese Eng. Mining Co.

Tobacco Dealers
British-American Tobacco Co., Ltd.
Cia. General de Tabacos
Olsen & Co., Walter E.

Tools
American Tool Works Co.
Lodge & Shipley Machine Tool Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.

Windmills
Defiance Machine Works.

Water Softeners
Babcock & Wilcox Ltd.

Wood Working Machinery
American Tool Works Co.
Defiance Machine Works.
Lodge & Shipley Machine Tool Co.
Shanghai Dock & Engineering Co., Ltd.

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THE PRESERVATION OF CHINA'S SOVEREIGNTY

NEUTRAL THOUGHTS ON THE NEUTRALIZATION OF SHANTUNG

I

A SEAPORT FOR TSINANFU

BY GEO. BRONSON REA, M. E.

For the past five years the Japanese authorities and merchants of Port Arthur and Dairen, have been actively seeking to extend their sphere of commercial influence into northern and western Shantung and compete with Germany for the trade supremacy of that province. Only eighty-five miles of water separates the Japanese leased territory from the northern ports of Shantung, and a large junk and steamer traffic has been established between Dairen and Chefoo and the other minor coast towns. Owing to this activity on the part of Japanese merchants, the trade of Shantung has been as greatly stimulated by the wonderful prosperity in the Kwangtung Leased Territory as by the efforts of Germany working through Tsingtau and the Shantung Railway. The Japanese from their vantage point at Port Arthur, are actuated by much the same motives as influence the Germans. In their plans for the advancement of Japanese trade interests in Shantung, they also are reluctant to contribute to the growth of Chefoo, by diverting trade from Dairen. The Japanese are quite frank about this matter, and openly state that from the viewpoint of the Dairen merchants, Chefoo is not located in a favorable position for their trade propaganda. What they desire is a port on the coast further to the west. In other words, they desire a foothold in a new unopened point, which can be developed under their influence. To use the words of a Japanese writer, in an article published over two years ago, "Fortunately there is Lungkow, that was opened to junk trade as the auxiliary port of Chefoo. It is situated 120 miles west of Chefoo, and just outside the distributing sphere of the German Shantung Railway."

To quote the words of this editor of a semi-official Japanese organ:

"A good natural harbor being scarce in Shantung there is every possibility that the place will be used to good advantage, *so that it will grow to be a great gateway to the province just as much as Kiaochou on the other side of the peninsula.* Moreover, from the point of connection between Dairen and the interior of Shantung, Lungkow is far more advantageous than Chefoo."

"When the place is opened to trade as an outer port of Chefoo, the benefit is not limited to those above enumerated. The land in the neighborhood now left in waste will at once become valuable, and become a great resource to the province whose financial condition is in no way an enviable state. Further, if the Hsiao Ching-ho, an old canal, be dredged out, the distance of 100 miles from Tsinanfu to the river mouth can be freely covered by large junks or even small steamboats, instead of little crafts now plying between the coast and Tsinanfu, and establish connection with the Tsingtau-Tsinanfu Railway from the northern shore."

"Of course, more or less artificial means are needed to make Lungkow a serviceable port, but there is no necessity to start the work on a gigantic scale so as to enable large ocean-going steamers to come alongside the wharf. *Parties interested in the development of the harbor are considering the work of increasing the depth of water sufficient for the present, using a part of the income derived through the disposal of land along the water front for the work.* Since the Chinese authorities of Shantung as well as the local people are approving the scheme, it may come out as a concrete fact before long unless some unforeseen impediments block its way."

This was written in April, 1912, and published in the "China Tribune" of Tientsin, the recognized authority on Japanese affairs in China. The same paper is responsible for the following significant note, showing the trend of Japanese thought at that time.

"Shipping trade along the northern coast of Shantung Province has been making steady progress of late, and there are now very few ports to which steamers do not ply. Only between Tientsin and Lungkow there is no good port allowing the entrance of a steamer. Some fifty miles southwest of Lungkow, however, there is a river called the Hsiao Ching-ho, the mouth of which is closed with bars, only a few feet of water being found there, but proceeding up the stream there is plenty of water which is at some places as deep as 20 fathoms, (feet?) and small steamers may be run to Tsinanfu without any difficulties. Moreover the Hsiao Ching-ho runs through the fertile districts of the Province, rich in agricultural products, and Honan produce is also sent down to this river. It appears, therefore, there is a good prospect for a steamship service, and some Japanese and Chinese merchants in Chefoo are contemplating the establishment of steamship services on this river."

The Japanese authorities in Dairen were therefore fully awake to the commercial and economical advantages of the place,

as is evidenced by the organization in Dairen of the Lungkow Bank, with the head office at Lungkow and a branch at Dairen. Mr. S. O. Tanaka, the Manager of the Dairen Steamship Co., appears as the central figure of the enterprise. It seems that this gentleman solicited a grant or subsidy from the Japanese Government of Kwangtung to assist the enterprise, and it is understood that this was awarded under special conditions. The Bank is reported as being in sound financial condition, and conducting a profitable business. It is worthy of note, that Mr. Tanaka was also the leader in the proposed scheme to connect Lungkow with Hwang-hsien by a light railway. The Dairen Steamship Company is also responsible for the development of the profitable direct steamship service between Lungkow and Dairen, and Lungkow and Newchwang, thus eliminating the port of Chefoo. The establishment of a Japanese controlled and subsidized bank at Lungkow, long before its being opened as a treaty port, indicates that by the time the port was opened in December last, all the most desirable property was safely in Japanese hands, or mortgaged to the Bank. It will be recalled that to counteract the influence of Japan, the Chinese Government freely opened seven ports of her northern provinces last December to international trade. Six of these ports were located in the zone of Inner Mongolia, menaced by Japan's political pretensions in this quarter. Taonanfu, Chifang, Dolonor, Jehol, Kweihwacheng, and Hulutao were thus opened to trade. Included in the list, was the hitherto obscure and insignificant port of Lungkow in Shantung. The pressure of Japan at this point was as strongly felt as in the sphere of Inner Mongolia. It was too late however for any other foreign interests to gain a foothold in Lungkow. The operations of the Japanese Bank, and the activities of Japanese traders from Dairen, using Lungkow as their base, had forstalled other nationalities in this neglected corner of Shantung. If the much discussed and advertised Chefoo-Weihsien railway is ever built, instead of its traffic solely increasing the prosperity of Chefoo, as intended, the Japanese at Lungkow, by constructing a short line of 25 miles to Hwang-hsien, would intercept the products from the interior, and divert the export trade through their base at Lungkow.

The Japanese trading concerns at Dairen, instead of conducting business with the interior of Shantung, through the port of Chefoo, would ship their products on their own subsidized steamers through the port under their commercial control at Lungkow. This would save 75 miles of railway haul, not to mention landing charges and other special taxes levied at Chefoo. Commercially and economically, therefore, their position was correct, but to succeed they had first to persuade the Chinese authorities to open Lungkow as a treaty port. Thus the Chinese Government, who has been deeply concerned for many years over the future of Chefoo, and has devised and sanctioned many schemes to revive its commerce, and combat the ascendency of Tsingtau, was compelled to still further detract from its importance by opening the port of Lungkow at Japan's behest. The Japanese merchants at the latter place stood to profit, no matter what plans were followed in the future. If the Railway from Chefoo to Weihsien was ever constructed, Lungkow through its favorable position further to the west would tap the line, and cut the trade of Chefoo in half. If it was never built, the Japanese would continue to use Lungkow as their base for trading with central and western Shantung, and thus be 75 miles nearer their market, than the port of Chefoo, with its established Chinese and European interests in control of property and trade.

By dredging the bar at the mouth of the Hsiao Ching-ho (Little Clear River) an unobstructed waterway is open for a very light draft steamship service direct to Tsinanfu, in the heart of Shantung. Under the Inland Waters Steam Navigation Rules, the smaller Japanese steamers would then have a clear run from Dairen to Tsinanfu, a distance of approximately 290 miles, which under normal conditions could be accomplished in 24 hours. It will be seen therefore that the Japanese program if carried out without opposition would constitute a decided menace to Germany's trade supremacy in the Province. From her base at Dairen, with through ocean and river communication, Japan could deliver her products in Tsinanfu much cheaper than by utilizing the more expensive rail route from Tsingtau. And all that is needed to accomplish this is the expenditure for dredging the bar of the Hsiao Ching-ho at its mouth, and deepening the Channel in other places, a task much less expensive and of as much political and commercial importance as the Haiho and Liao River Conservancy and dredging works.

His Excellency President Yuan Shih-kai.

Governor of Shantung, December, 1899—November, 1901.

H. E. Chang Jen-chun.
Governor of Shantung, November, 1901—May, 1902.

It is not strange therefore, that Japan selected the almos unknown port of Lungkow as the point for the disembarkation of her army, and her permanent strategic base in the campaign against Tsingtau.

Japan has promised to return Kiaochou to China. There is no reason at this time to question her honorable intention. She has given her word, and until it is broken, public opinion should reserve judgment and criticism. If Japan hands Kiaochou back to China as she has promised to do, and Tsingtau is thrown open as an international treaty port, Japan is entitled to ask for and expect to receive adequate compensation from China. Other nations who have been prohibited by the operation of the Kiaochou Convention from enjoying equal participation in the development of Shantung, cannot complain if Japan receives some special compensation for opening the door again.

Japan's previous actions and attitude in Korea, Manchuria, Inner Mongolia, and Fukien, however, are remembered and tell against her, and other nations instinctively anticipate that she may feel justified in pursuing the same tactics in Shantung. The door may theoretically remain open, and yet be difficult for others to pass through and enjoy equal privileges on the inside. As Japan has the moral and political support of her powerful Ally, other nations have accepted the situation in Manchuria, but if the same policy be extended to Shantung, they would undoubtedly view with deep concern this additional limitation of unrestricted trade rights. However for the present, it would be manifestly unjust to presuppose any such ideas, and the world must take Japan at her word.

If Japan restores Kiaochou to China, and opens Tsingtau as an international treaty port, what compensation could she legitimately request from China without infringing the rights of other nations? Germany's railways and mines, with the rights attached to them? This could only extend to those special rights embraced in the Kiaochou Convention and constructed with purely German capital and operated as purely German concerns under a charter from the German Government. It could not extend to those railways financed by German capital, for the benefit of the Chinese Government, as these lines are the exclusive property of the latter, and the bonds although issued by a German financial institution, may be held by investors in many countries.

If it is ultimately decided that the Shantung Railway Company, which owns and operates the railways, mines and other industries embraced within the specifications of the Kiaochou Convention, is a German official corporation, in which the rights of the private investor do not count, then no other Power can reasonably criticize Japan for seizing them as spoils of war. It is a fact nevertheless, that the capital for these enterprises was supplied by purely private investors, and the Government only exercises its rights of supervision and regulation. Or, if through the fortunes of war, and the pressure of diplomacy, these spoils are abandoned, what would remain for Japan to ask for? It occurs to us that the building of a railway from Lungkow to Weihsien, and requiring China to conserve the Hsiao Ching-ho waterway at her own expense, would adequately compensate Japan and give her an undisputed legitimate trade advantage in Central and Western Shantung, due to the proximity of her great commercial base at Dairen.

As we have remarked, it is unfair and premature to prejudge or question Japan's good faith. However, if Tsingtau is restored to China, there is no good reason why China should not contribute to the legitimate expansion of Japanese commerce by maintaining at her own expense the waterway which would permit her traders ready access from Dairen to the hinterland and heart of Shantung. This would advance her trade interests with this part of China on a more permanent and profitable basis, than is possible by the use of the railway from Tsingtau. The distance from Port Arthur to the mouth of the Hsiao Ching-ho is 165 miles and from there to Tsinanfu about 120 miles, or a total of 285 miles of sea and river. The distance by rail from Tsingtau to Tsinanfu is 240 miles. The legitimate economic and commercial advantage in freight rates must always remain with Port Arthur and Dairen. Japan could, therefore, well afford to act magnanimously by restoring Tsingtau to China, on the condition that it be maintained as an international port with equal trade opportunities to all. At the same time she could fairly and reasonably demand in compensation, that China should dredge the bar and maintain open to navigation the channel of the Hsiao Ching-ho for the vessels of all nations under the Inland Waters Steam Navigation rules. By reason of her possession of Port Arthur and Dairen, this would give Japan an honorable and legitimate trade preference over all other nations, and permit her merchants to dominate the trade of Tsinanfu and the hinterland, without resorting to unfair methods, or discrimination in freight rates over the Shantung lines. The construction of a railway from Chefoo to Weihsien with a branch to Lungkow will enable her merchants at Dairen to again control the trade of the Province, through the port of Lungkow, already under their influence. The port of Chefoo is 85 miles from Port Arthur. Lungkow is 90 miles distant from Port Arthur or for all practical purposes the

H. E. Chou-fu.

Governor of Shantung, May, 1902—October, 1904.

H. E. the late Yang Shih-hsiang.
Governor of Shantung. Jan, 1905—Sept., 1907.

sea distance is the same Lungkow, however, holds the advantage ot being 75 miles nearer the heart of the province, or that much less rail distance. The Japanese merchants at Dairen and Port Arthur through their branches at Lungkow, would thus be able to counteract the influence and prominence of Chefoo, and control the market in a legitmate manner, to which neither China nor any other nation could take exception.

If China of her own volition appropriated and expended a sufficient sum for the conservanry of the Hsiao Ching-ho, her own traders would undoubtedly reap the greatest rewards. Instead of desperate and ineffectual attempts to obtain foreign funds for the construction of the Chefoo—Weihsien line, against the passive opposition of Germany, it was well within her rights to have appropriated certain sums for the conservancy of the Hsiao Ching-ho, which would have materially assisted towards neutralizing the German sphere of influence in the province by opening it up to foreign steam navigation.

This is not a new problem for China, and her officials cannot plead ignorance of its importance. From the commercial viewpoint of Tsinanfu, the capital of Shantung, the most important natural trade outlet of the province is the Hsiao Ching-ho, which has its source in the lakes and springs within the very walls of the capital. Partly canal, and partly canalized river, the Hsiao Ching-ho from time immemorial has served as the main artery of trade between Tsinanfu and the sea, and the district adjacent to Laichow Bay. Even to-day with the service of the Shantung and Tientsin-Pukow Railways, the Hsiao Ching-ho remains as the most important natural trade outlet.

In certain articles, notably timber from Manchuria, salt from the coast marshes, cigarettes imported through Chefoo, reed matting and other light but bulky articles of import, and in beans, grain, iron, rice, pans, &c., among exports, the cheaper freights make the river a very serious competitor with the railway. This competition is not alone with direct imports and exports of lighter products, but is keenly felt in the traffic between Tsinanfu and the district of Weihsien. The many rivers and creeks connected with the Hsiao Ching-ho, permit the water borne traffic to compete with the railways in all the main towns between Tsinanfu and Ching Chou fu, without passing out of the mouth of the river. The several rivers empltying into Laichow Bay within a distance of 40 miles from the mouth of the Hsiao Ching-ho permit the junks to compete with the railway at Weihsien and the neighbouring districts.

That the safeguarding of this most important water artery of trade has been duly considered in the past by the Chinese authorities, is evidenced by the Report of Captain W. F. Tyler (Coast Inspector to the Maritime Customs) on the Yellow River in 1906. The investigations of Captain Tyler were not carried out with the view of planning a scheme for the control of the Yellow River itself, but were directed towards finding a way to safeguard the Hsiao Ching-ho from the danger of floods and breaks in the banks of the larger and swifter river. But like all such schemes for the improvement of the country and the preservation of life and property, depending on the initiative of the Chinese Government, nothing has ever been done to preserve this important waterway. It would appear that the many Governors of Shangtung, some of whom now control the destinies of the country at Peking, have fallen completely under German influence, and were either intimidated or persuaded to forego any expenditure on this scheme which would have contributed to neutralizing the effect of Germany's special privileges in the province. It has been left to the sharp witted Japanese traders to recognize the strategic commercial importance of this waterway, and to take the necessary steps to awaken the Chinese Government to its obligations.

The careful preparatory work for the opening of Lungkow, so that when foreigners were legally free to enter, the most valuable business sites and trade connections would be in Japanese hands, and the references to the necessity of dredging the Hsiao Ching-ho, clearly indicate the trend of Japan's commercial policy prior to the commencement of her operations against Germany in Tsingtau. With Lungkow opened, the next step would have been to compel China to improve the river, which would give free access to the heart of the Province.

It would seem that if Japan intends to fulfil her promise and return Kiaochou to China, and she still retains the ambition to secure the major part of the trade of the Province, that her best move would be to follow the policy already initiated. It is clear, that if the same tactics are pursued by Japan in Tsingtau and Shantung as have been charged against her in Manchuria, she will completely destroy all confidence in her word and honour, and other nations will chafe under the trade restrictions imposed. And, as in Manchuria, the animosities thus engendered will not be with American traders who have no special interests in Shantung, but

H. E. Yuan Shu-hsun.
Governor of Shantung, April, 1908—June, 1909.

H. E. Sun Pao-chi.
Actual Minister of Foreign Affairs, Governor of Shantung,
June, 1909—Dec., 1911.

will arise from those who are now the close allies and friends of of the Japanese. Despite all allegations against Japan's tactics in Manchuria I have always maintained that she secured control of the import trade of that province through the operation of legitimate and natural laws of trade, rather than through the alleged freight discrimination and other unfair practices, and this view has been accepted by the majority of American merchants formerly interested in the trade of Manchuria.

Provided the Hsiao Ching-ho is dredged and kept open for light draught steamers, Japan can operate more economically and efficiently from Port Arthur than from Tsingtau. Even with the control of the railway in her hands, the direct water route from Port Arthur to Tsinanfu would control the trade situation of over half the area served by the railway. It is clearly evident then that Japan's best interest would be served by carrying out her promise to return Tsingtau to China as soon as possible, on the condition that China compensates her in part, by maintaining the channel of the Hsiao Ching-ho open to navigation, and by constructing the railway from Chefoo to Weihsien. As far as Japan is concerned, her trade point will be located at Lungkow, which enables her merchants to divert her share of the trade from Chefoo. The open river to Tsinan, will permit her small steamers to dominate the trade of the interior of the province direct from her own base at Port Arthur.

The retention of Tsingtau by Japan, will ultimately lead to discord and distrust and menace the peace of the Far East, which she is pledged to uphold. The expenditure of a few million taels on the improvement of the Hsiao Ching-ho would permit her to dominate more completely the commercial future of Shantung, in a legitimate way, and preserve the confidence, respect, and friendship of all her commercial rivals in the East.

Germany's lease of Kiaochou has 85 years yet to run. Japan's heritage of the Kwangtung lease expires in 8 years and 4 months (March, 1923.) If Japan restores Kiaochou to China is it fair for her to ask in return an assurance that the Kwangtung lease will be extended to 85 years on its expiration?

Japan's future in China lies in the development of Manchuria through the exploitation of the South Manchuria Railway, and the other lines China has granted her the right to construct. It will take all of Japan's loose capital for years to come, to carry out her Manchurian program. If she aspires to succeed to Germany's position in Shantung, dominate the Yangtze Valley trade, and close the door in Fukien to other foreign capital, it would seem that she has bitten off more than her financial strength will assimilate. With the termination of the war, only the British and French money markets would be open to her to raise funds for the prosecution of such ambitious dreams, always provided that British capital would follow the lead of the British Government, in recognizing Japan's exclusive interests in Fukien. Japan could raise no large loan in England to advance her position in the Yangtze. French and American financiers would never entertain any Japanese proposal for funds destined for the development of Fukien. It will require large sums of money for Japan to step into Germany's shoes in Shantung, and follow out the same trade policy from Tsingtau, and it is safe to assume that she would seek in vain for financial assistance in Europe or America for the development of such schemes. China has no funds of her own, and Japan is little better off. Can she carry the load of Korea, Manchuria,

H. E. Chow Tsz-chi.
Actual Minister of Finance, Republican Governor of Shantung,
March, 1912—Sept., 1913.

Inner Mongolia, Shantung, Fukien, the Kirin-Hunchun Railway, the Inner Mongolian railways, the Foochow-Nanchang and Foochow-Canton lines in addition to the South Seas, her interests in the Yangtze Valley and other minor burdens? Japan cannot finance all these schemes. The money markets of the world will be closed to her, and if she persists in such an ambitious task, she will exhaust her credit, and be compelled to unload the burdens. The rulers of Japan will hardly sacrifice the country's financial position for years to come, to indulge in a Chinese adventure which can only spell ruin to her in the end. If we accept all this, then it is apparent that Japan's interests will be best advanced by restoring Kiaochou to China, on condition that the latter consents to an extension of her lease of Kwangtung, and engages to improve the Hsiao Ching-ho for the benefit of trade. We may now turn to a serious consideration of the suggested river improvement scheme, for the purpose of ascertaining its financial and engineering practicability.

The Hsiao Ching-ho is about 120 miles long, from its source at Tsinanfu to its outlet in Laichow Bay. Before taking under consideration the improvement of this waterway, let us inquire into the feasibility and economy of excavating an entire new waterway paralelling the Hsiao Ching-ho, so that when completed, the waters of this stream can be conveniently diverted to the new channel. This suggestion is worthy of serious consideration, as the cost of labor in North China, and especially in Shantung is phenominally low, even when compared with other districts of China. No machinery would be required for the proposed task. It would simply call for the employment of thousands of laborers working with their accustomed native tools and under native methods and supervision. The earth excavated from the new canal would be deposited on its north bank to serve as a permanent protective dyke against the inevitable break in the banks of the Yellow River. The proposition would then resolve itself into a primitive task of excavating and banking the dirt on one side, calling for the unlimited employment of unskilled labor, working under conditions familiar to the Chinese from the experience of ages.

With this in mind, let us assume that a new canal is to be dug from Tsinanfu to the Gulf to permit the passage of vessels having a maximum displacement of 1,500 tons and a draft of 20 feet. In other words, a channel that will admit the free navigation of the ordinary type of small coasting steamers common to this part of the world. This would require a depth of 25 feet in the channel and a width of 200 feet. For the sake of economy, we will assume a channel sufficiently wide for the passage of only one steamer at a time, with turning out or passing basins at every five miles. This then will give us the following cubical contents of earth to be excavated, and deposited alongside in a bank or dyke.

General Chin Yun-peng.
Actual Military Governor of Shantung.

One harbor or basin at Tsinanfu, capable of berthing 15 steamers at one time, say 1,000 feet long by 500 feet wide by 30 feet deep. This would give about 2,500 feet of wharf length.

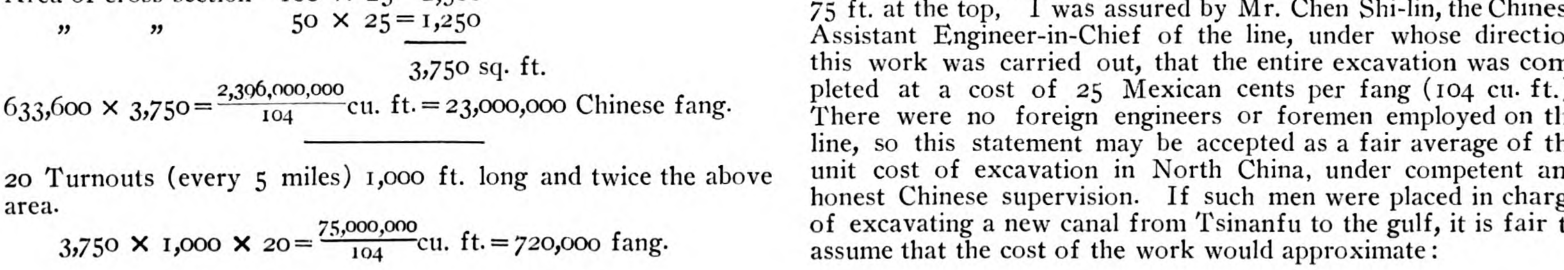
$$\frac{1{,}000 \times 500 \times 30}{104} = 144{,}000 \text{ fang.}$$

This gives us the following excavation totals:

Canal	23,000,000 fang.
Turnouts ..	720,000 „
Basin	144,000 „
	23,864,000 fang.

or in round figures 24,000,000 fang.

What would be the cost in North China, of completing this work with Chinese labor working without the use of machinery? Last year I was shown a cutting on the Chang-Shui extension on the Kalgan railway at the approaches to the bridge over the Yu



120 miles × 5,280 = 633,600 feet.

Area of cross section—100 × 25 = 2,500
„ „ 50 × 25 = 1,250

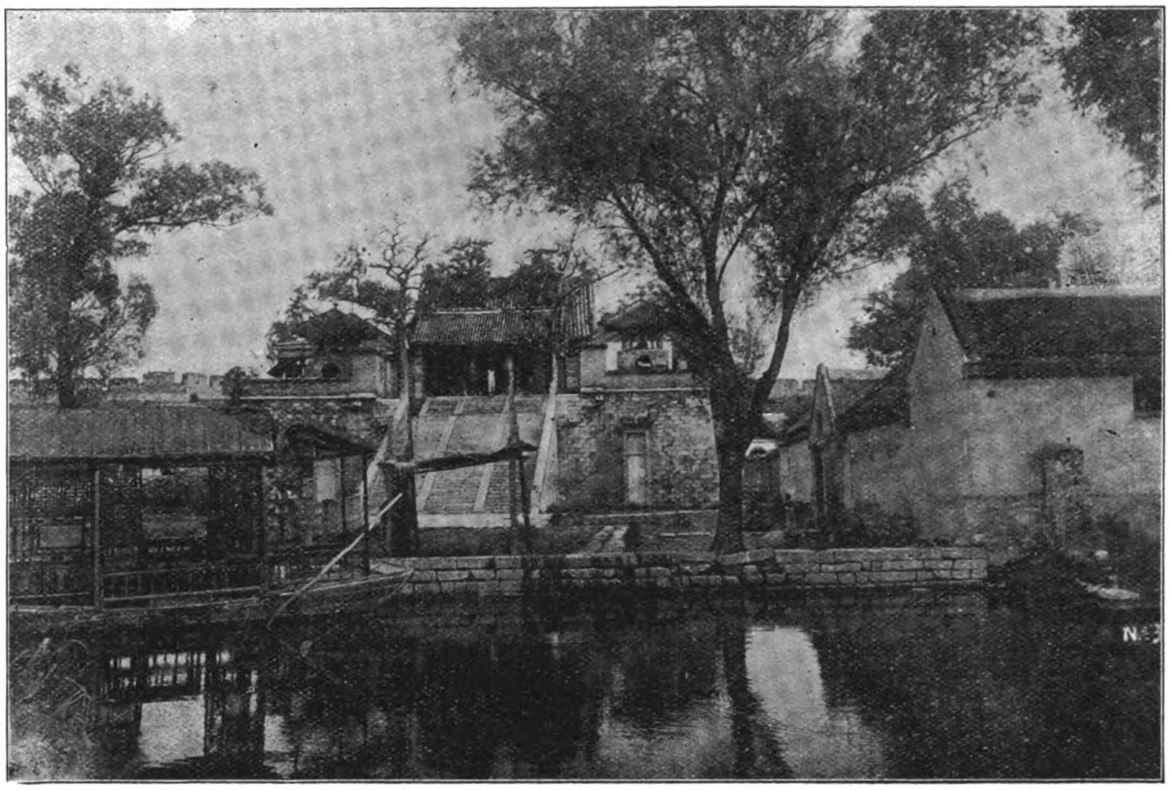
3,750 sq. ft.

$$633{,}600 \times 3{,}750 = \frac{2{,}396{,}000{,}000}{104} \text{ cu. ft.} = 23{,}000{,}000 \text{ Chinese fang.}$$

20 Turnouts (every 5 miles) 1,000 ft. long and twice the above area.

$$3{,}750 \times 1{,}000 \times 20 = \frac{75{,}000{,}000}{104} \text{ cu. ft.} = 720{,}000 \text{ fang.}$$

River at Tatung, that was over two miles long, with an average depth of 35 feet, and width of 20 feet at the bottom sloping to 75 ft. at the top, I was assured by Mr. Chen Shi-lin, the Chinese Assistant Engineer-in-Chief of the line, under whose direction this work was carried out, that the entire excavation was completed at a cost of 25 Mexican cents per fang (104 cu. ft.). There were no foreign engineers or foremen employed on the line, so this statement may be accepted as a fair average of the unit cost of excavation in North China, under competent and honest Chinese supervision. If such men were placed in charge of excavating a new canal from Tsinanfu to the gulf, it is fair to assume that the cost of the work would approximate:



The Lake, Tsinanfu, Temple of the Northern God.

24,000,000 × 25 = $6,000,000 (Mexican) or say $2,500,000 Gold. (£500,000).

The difference in excavation costs in North China is strikingly contrasted by comparing the above, with the cost of work conducted under the supervision of the Haiho Conservancy Board at Tientsin. In the December, 1913, issue of THE FAR EASTERN REVIEW was published a full report of the work of this Board, and amongst other items the cost of digging the third cutting by hand was given at the rate of Taels 0.43 per fang. This apparently included extra work which is not clearly specified in the report. In noting this comparison of costs there is no intention of reflecting on the merits or experience of those having charge of either work, but the results are here given, merely to arrive at an intelligent estimate of the possible cost of excavation. It would appear that the cost of the Haiho work was increased by special conditions, and as the work is similar in character to the suggested Hsiao Ching-ho canal, it can also be taken as a precedent. We then have:—24,000,000 × (Tls. 0.43) or 57 cts. Mex. = $15,680,000.

These may be taken as the two extremes, the first representing the lowest unit price under honest and competent Chinese management, and the latter as a fair average price paid for similar work under foreign supervision. The unit price for all classes of railway earthworks in all parts of China, under foreign engineers, may be accepted as averaging 50 cts., Mexican per fang. If we assume then that the actual cost in Shantung will rest somewhere between the Chinese unit price of 25 cts., and the foreign supervised work of 50 cts., it is fair to take 37½ cts., as the probable average cost of excavating the canal by manual labor.

24,000,000 × .375 = $9,000,000 Mex.

To this must be added the cost of land. If we assume a strip of land 400 feet wide, as ample for the canal and the protecting dyke, we have.

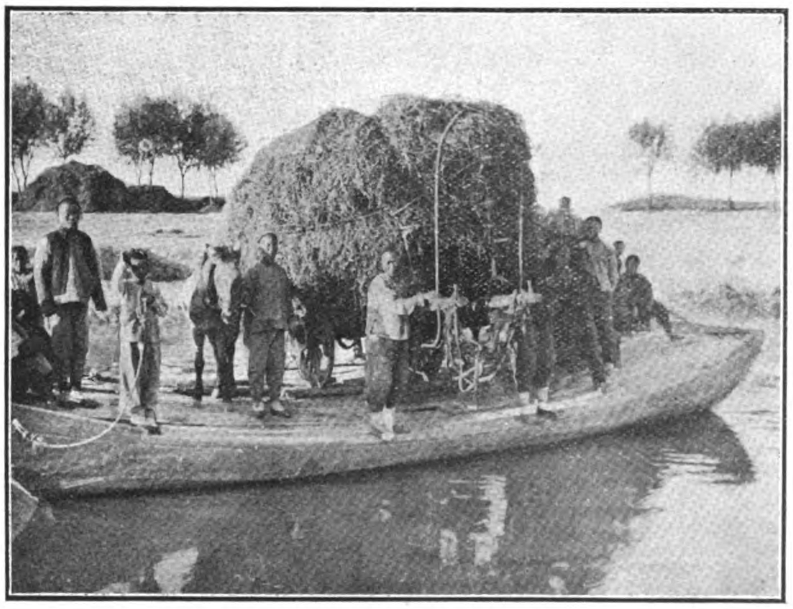
$$\frac{633{,}600 \times 400}{43{,}560} = 5{,}800 \text{ acres.}$$

The value of land in Shantung is rather high compared with other sections of China, owing to the dense population. Considering however the character of the land, located within the danger zone of a break in the Yellow River, and the undoubted power of the Government to impose a reasonable valuation for its expropriation in behalf of the public interests, it is fair to assume that at the outside the cost should not exceed $300 Gold per acre or say $120 Mexican per Chinese mow). If we accept this low valuation we have, 5,800 × 300 = $1,740,000 Gold or say $4,000,000 Mexican as the probable land cost

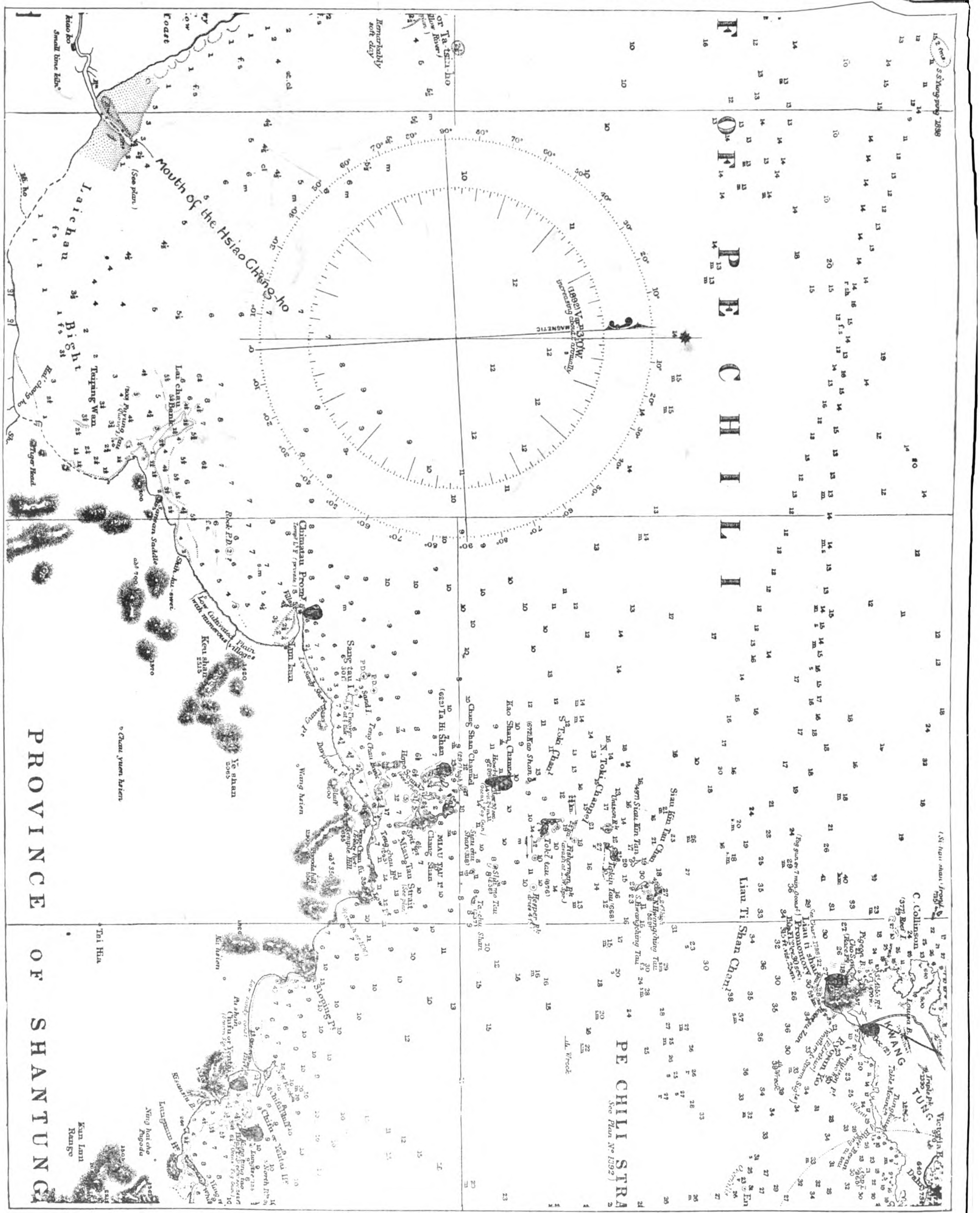
The altitude of Tsinanfu, according to the profile map of the Shantung Railway is 30 meters or 98 feet above sea level. This would give a slope or fall of .8 feet (9½ inches) to the mile, or rather over the average of some of the larger rivers in China and sufficient to cause a very heavy current. This would call for the construction of at least two locks, whose cost can be roughly estimated at another $1,000,000 Mexican.

We then have a final rough estimate of the cost of a new ship canal from Tsinanfu to the Gulf as follows:

Cost of land	4,000,000 Mex.
„ „ excavations	9,000,000 „
„ „ locks..	1,000,000 „



Ferry-boat on the Hsiao Ching-ho.



NAVIGATOR'S CHART OF GULF OF CHIHLI, ILLUSTRATING RELATIVE POSITIONS OF DAIREN (Dalny) CHEFOO, LUNGKAU AND MOUTH OF THE HSIAO CHING-HO.

Cost of dredging bar; offices; warehouses, &c. (rough)	1,000,000 Mex.
	Mexican $15,000,000
	or $7,000,000 Gold. (£1,400,000)

We have made this rough calculation merely to indicate what the probable cost would be if the Chinese undertook to complete such a task without the assistance of machinery. It is well understood that Chinese manual labor under native supervision in work of this nature, is almost as economical as the cost of purchasing and operating modern excavating machinery. If steam dredges or excavators are employed that would deliver the material on the bank direct without extra handling, the above cost could be materially lowered. The cost of similar work on the Haiho Conservancy at Tientsin with a modern dredging plant, allowing for depreciation, is given at Taels 0.27 (.36 Mex. cts.) per fang, or 4 cents (Gold) per cu. yard. This figure could, however, be still reduced if a large modern shore delivery excavator is employed. Work of this kind is carried out abroad at an average cost of 2 cents gold per cubic yard, or 16 cents Mexican per fang. Cost of plant, depreciation and other charges would raise this to 20 cents per fang, or a saving of 17½ cents per fang over hand labor. (24,000,000 × 20 = 4,800,000 a reduction of $4,200,000 on the excavating item of the preceding estimate, lowering the total to $10,800,000 Mexican.

In other words the Chinese Government can create an entirely new ship canal 120 miles long, making a seaport at Tsinanfu, with a minimum expenditure of $10,800,000 (Mexican) working with a modern excavating plant, or a maximum of $15,000,000 employing Chinese labor and methods.

If we abandon this idea as too costly (and it has only been put forward for the sake of comparison) and attempt to estimate the cost of widening and deepening the existing channel of the Hsiao Ching-ho, we are handicapped at the outset by a lack of accurate knowledge of the condition of this river. However we can make an approximate estimate. The cost of the land would be reduced by at least one third, lowering this item to $2,700,000. The actual amount of dredging may also be safely assumed to be one-third less, while the other items would remain the same. If the dredging can be arranged so that the material will be delivered on the banks direct, the cost of this work can be fairly and accurately estimated, from actual experience elsewhere.

If we allow one-third less material to be removed from the existing channel, than in the preceding estimate, we have 16,000,000 fang as the amount to be handled. The ordinary "Priestman" or "Kingston" type of grab or bucket dredges, handling about 2,400 yards per day (600 fang) will do this work for an average of 4 cents (Mexican) per cubic yard deposited in the barge alongside. This includes cost of plant, (dredgers and barges) depreciation, interest, coal, repairs, and operating charges. Allowing 350 working days in the year, one of these dredges will handle 210,000 fang in a year or complete the entire work in 75 years. It would take 19 of these machines to complete the task in four years. The cost of one of these dredges delivered in China would be about £900. The cost of distributing the material by hand from the barge to the dyke, would be about 2 cts. Mexican per cu. yard, or a total of 6 cts. Mexican per yard, or 24 cts. per fang.

The estimate for the canal on this basis would be:

Dredging:	
16,000,000 × .24=	$3,840,000
Land	2,700,000
Locks, dredging Bar, warehouses, &c. ..	2,000,000
Mex.	$8,540,000

The item of dredging might be still further reduced by employing machines of greater power and capacity. The costs of dredging in Europe and America vary to such an extent, according to the nature of the material, that no fair comparison can be made with work in China. However, it is fair to assume that with Chinese labor, and proportionate decrease in other expenses the cost of dredging in China, where no barges are employed, would average about 2 cts. Gold per cu. yard, or 16 cents per fang.

The only accurate guide we have as to dredging costs in China, is the published report of Mr. Hugo von Heidenstam, the director of the Whangpoo Conservancy Works. If we follow his estimates, eliminating the pumping plant, tugs, barges, &c., we can arrive at a fair idea of what the work of the Hsiao Ching-ho might be accomplished for with the larger and more powerful dredges. Taking as a basis a bucket dredge with a capacity of 600 cubic yards per hour, working double time or 20 hours per day for 250 days in the year, fitted for shore delivery, one dredge would handle 3,000,000 cu. yards or 750,000 fang in one year. It would take four of these dredges to handle the 16,000,000 fang in five years. If we accept Mr. von Heidenstam's figures as a basis, the cost of the Hsiao Ching-ho Canal would then be approximately:

(All items × by 5 to cover 5 years expenditures)

4 Bucket Ladder Dredges, actual capacity in sand, 600 cubic yards per hour, dredging depth 30 feet, with shore delivery arrangement. Delivered afloat at the mouth of the Hsiao Ching-ho @ Tls. 200,000 each .. .. Tls.	800,000
STAFF AND CREWS, PER YEAR:	
General: One Superintendent for the four dredges and plant .. ..Tls. 7,000 × 5	35,000
General: One mechanical Engineer to supervise the 4 dredges	35,000
4 Dredge Masters (10 hrs.) @ Tls. 2,500 each per year = Tls. 10,000 × 5	50,000
4 Assistant Dredge Masters (10 hrs.) @ Tls. 1,500 per year = 6,000 × 5	30,000
10 Sailors / 3 Engineers. / 3 Firemen. } Single Crew. Tls. 3,000 per year.	
Double shift: 3,000 × 2 × 5	30,000
COAL; 250 days, working 20 hrs. per day, using 15 tons per day for each dredge = 3,750 tons × 4 × 5 = 75,000 tons @ Tls. 7 per ton	525,000
RENEWALS; 5% on cost of plant per year Tls. 40,000 × 5	200,000
STORES; Tls. 400 per month each dredge = Tls. 4,800 × 4 × 5	96,000
Administration (?) Tls. 30,000 per year × 5.. ..	150,000
Total cost for 5 years .. .. Taels	1,916,000

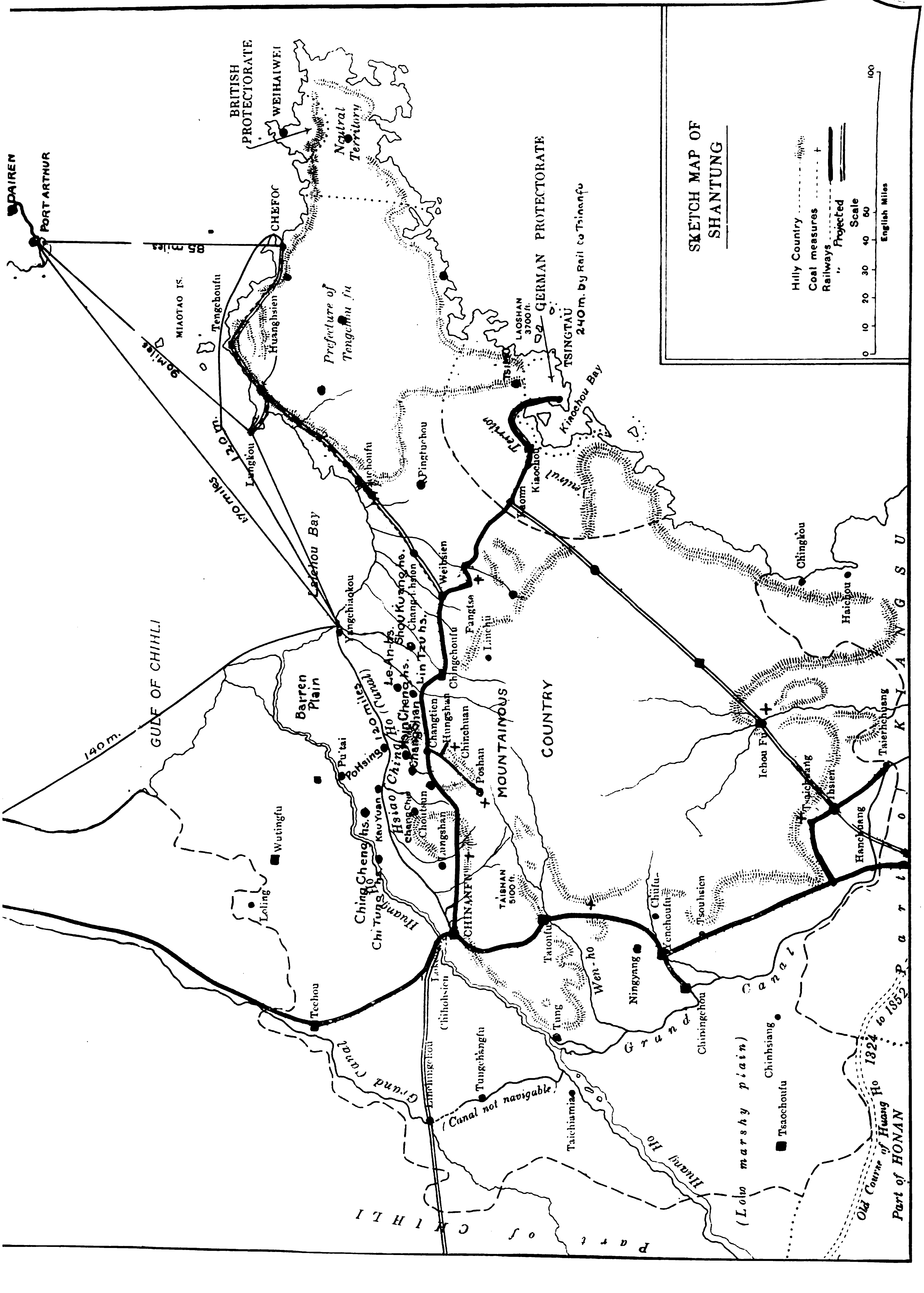
or say $2,500,000 Mexican as the cost of dredging the 16,000,000 fang, (or 15 2/3 cts. Mexican per fang) and delivering the material on the bank. To this must be added the labor cost of handling and spreading the material uniformly along the protecting dyke, and which may be estimated at five cents Mexican per fang for about one half the material:

8,000,000 fang × .05 = $400,000.

This then gives us the following totals:—

Dredging cost	$2,500,000
Spreading by hand on dyke	400,000
Land	2,700,000
Locks, Dredging Bar, Offices, Warehouses, &c.	2,000,000
Mex.	$7,600,000

At the expiration of the main contract, one of the dredges can be retained for the upkeep of the canal, and the other three disposed of, or utilized elsewhere. Assuming their value after five years of work at one half the original cost, this would decrease the above total by Tls. 300,000. There are other items which would have to be considered, such as bunding, stone facing of the dykes in places, and other extra work and contingencies which cannot be accurately determined, without a precise knowledge of what is necessary. Allowing however for all these extras, contingencies, interest on capital, &c., it is fair to assume that $10,000,000 Mexican will be ample to cover all expenditures, for the construction of a ship canal into the heart of Shantung Province, and convert the old inland


SKETCH MAP OF SHANTUNG
Hilly Country
Coal measures
Railways
Projected
Scale
English Miles
0 10 20 30 40 50 100
BRITISH PROTECTORATE
WEIHAIWEI
Neutral Territory
GERMAN PROTECTORATE
LAOSHAN 3700 ft.
TSINGTAU
240 m. by Rail to Tsinanfu
Kiaochou Bay
DAIREN
PORT ARTHUR
CHEFOO
85 miles
90 miles
120 m.
170 miles
140 m.
MIAOTAO IS.
Tengchoufu
Huanghsien
Prefecture of Tengchou fu
Lungkou
Laichou Bay
GULF OF CHIHLI
Pingtuchou
Kiaochou
Kaomi
Weihsien
Fangtse
Linchü
Chingchoufu
Poshan
Changtien
MOUNTAINOUS
COUNTRY
Barren Plain
Pu'tai
Potsing
Wutingfu
Loling
CHINANFU
TAISHAN 5100 ft.
Taianfu
Wen-ho
Ningyang
Chüfu
Yenchoufu
Tsouhsien
Ichou Fu
Chingkou
Haichou
Taierhchuang
Ihsien
Tehchou
Tungchangfu
(Canal not navigable)
Grand Canal
Huang Ho
Tsaochoufu
(Low marshy plain)
Old Course of Huang Ho 1324 to 1852
Part of HONAN
Part of CHIHLI
KIANGSU

provincial capital at Tsinanfu into a modern, wide-awake, prosperous seaport.

Is the work worth the expenditure? In eight years the Whangpoo River Conservancy at Shanghai has cost Tls. 8,778,172, and the Haiho Conservancy Board at Tientsin has expended Tls. 4,782, 904. All these funds have been raised by special loans, secured on tonnage dues, and by special grants and taxes on commerce. Foreign trade and shipping has paid the toll, without any severe strain on the revenues or treasury of the Chinese Government.

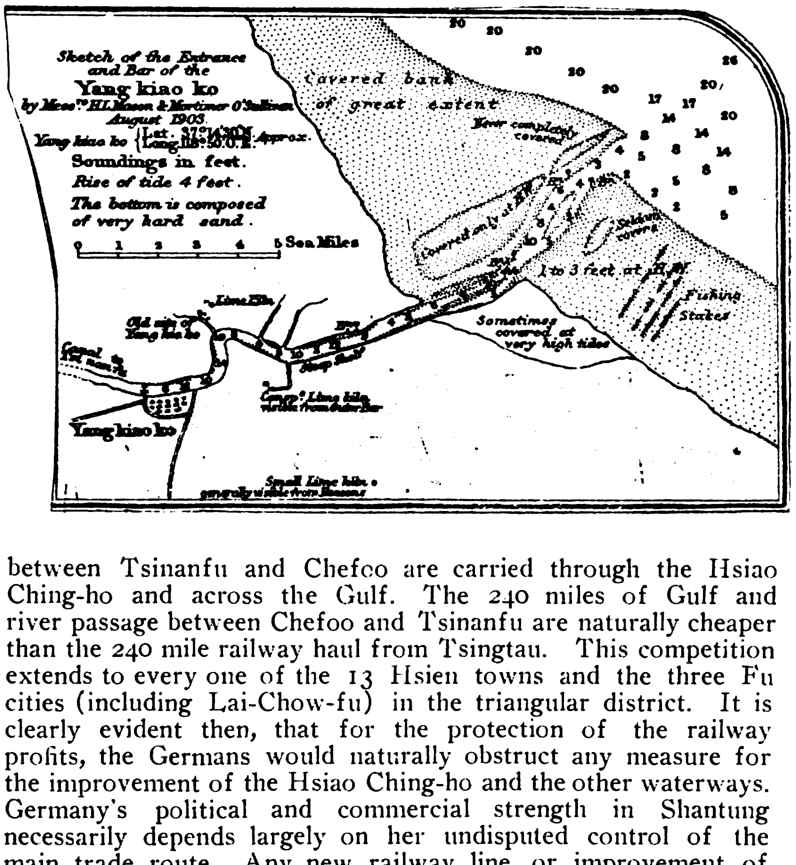
From the purely practical commercial viewpoint, judged simply on its merits as a cold business proposition, is it worth $5,000,000 gold to create a seaport at Tsinanfu? Would it pay? This can only be accurately answered after careful study of the advantages to be derived. There seems, however, to be no good reason to doubt the commercial success of such a scheme.

From the political viewpoint is it worth while?

For the last sixteen years, the provisions of the Kiaochou Convention have erected a ringed fence around the province of Shantung, effectively excluding all nations other than Germany, from participating in its industrial development. Shantung has been a closed sphere of German influence, where the Open Door declarations in respect to industries have failed to penetrate. If China desired foreign capital to develop any of the resources of the province, the stipulations of the Kiaochou Convention compelled her to turn to Germany for assistance. If the scheme failed to meet with the approval of Germany, and in any way menaced her dominant position in the Province, the assistance would be withheld, and strong opposition and pressure brought to bear to prevent China from raising the capital required elsewhere.

Equal *trade* privileges were enjoyed by all nations, but the actual development of industries with foreign capital and supervision depended on the consent and good will of Germany. Naturally any scheme which tended in any way to diminish the commercial importance of Tsingtau could expect little encouragement from Germany. Under a 99 years lease, Tsingtau was her base, and from this point the province must be dominated through the operation of her railway line. The hinterland of Shantung in the immediate vicinity of Kiaochou is poor and sparsely populated. Not until the town of Weihsien is reached, 110 miles distant, does the country begin to show signs of prosperity and provide products for profitable railway carriage. The heart of commercial Shantung is not really reached by the railway until it arrives at Ching Chow-fu, another 40 miles distant. From this point the railway enters into the productive and populous district of the province, where the bulk of the freight is collected for transportation to the port at Tsingtau. A glance at the map will disclose that sixteen of the largest cities of Shantung are located in the triangle formed by a line drawn from Weihsien to Tsinanfu as the southern base (120 miles), with the Yellow River from Tsinanfu to its mouth as the northern side (120 miles), and a line from the mouth of the Yellow River to Weihsien (60 miles) as the other side. The railway skirts the northern slope of the hilly and mountainous country. South of the railway are few towns of importance, and except the mineral output of the mines there is little traffic for the railway. The real commercial zone of the railway therefore lies in the district formed by the above triangle with its sixteen Hsien towns and two Fu cities. It will also be clearly recognized that the commercial strategic point is located at Weihsien. It will also be noted that all of this district is served by the many streams flowing into Laichow Bay, and ten of the cities are either served direct by the Hsiao Ching-ho, or come within its distributing sphere.

A rudimentary insight into commercial strategy, indicates that if the Chinese succeed in constructing the proposed Chefoo-Weihsien railway, it will tap the German line at the latter point, and divert a proportion of the traffic from Tsingtau to Chefoo. When it is remembered that one half the freight receipts of the German line are derived from the transport of its own coal from the Fangtse and Hungshan Mines, it is clear that the trade of the province follows some other outlet. The opposition of Germany to the construction of the Chefoo-Weihsien line, is manifestly influenced by a desire to maintain at all hazards the trade supremacy of Tsingtau, against competition in the only profitable commercial zone of the Province. The German line has an undisputed transportation monopoly in the 110 miles stretch from Tsingtau to Weihsien, but this is of little practical value as there are only three towns located within this economic distributing zone. The point of profitable traffic and real competitive center is located at Weihsien. A railway from this point to Chefoo, via Lungkou would therefore impair the value of the German line, and Tsingtau's position could only be maintained by granting discriminating freight rates on through traffic. Menaced by the probable future construction of this line, the Germans have also seen much of the trade diverted from their railway by the cheap river traffic in the profitable competitive zone. As already indicated, many light articles of export



between Tsinanfu and Chefoo are carried through the Hsiao Ching-ho and across the Gulf. The 240 miles of Gulf and river passage between Chefoo and Tsinanfu are naturally cheaper than the 240 mile railway haul from Tsingtau. This competition extends to every one of the 13 Hsien towns and the three Fu cities (including Lai-Chow-fu) in the triangular district. It is clearly evident then, that for the protection of the railway profits, the Germans would naturally obstruct any measure for the improvement of the Hsiao Ching-ho and the other waterways. Germany's political and commercial strength in Shantung necessarily depends largely on her undisputed control of the main trade route. Any new railway line, or improvement of the rivers, would admit serious competition with her own railway in the real traffic zone and undermine the commercial prosperity of the line. The political position hinges on being able to enforce the commercial monopoly. This paramount political position can be maintained only by excluding the commerce of other nations from a free entrance into the hinterland of the Province through other ports. Germany's position from a railway point of view is therefore secure and cannot be undermined unless a waterway is improved and opened up to international trade and commerce, under the Inland Waters Steam Navigation Rules. The improvement of existing waterways cannot be objected to by Germany, Japan or any other Power. Unless other nations are permitted to establish themselves in Tsinanfu and are freed from the railway monopolyt hrough the opening of a waterway from that point to the sea, it is clear that so long as

SKETCH MAP OF SHANTUNG

The sketch map of Shantung on the opposite page, fully illustrates the strategic commercial importance of the suggested Hsiao Ching-ho canal, and its relation to the Shantung and Chefoo-Weihsien Railways. The map clearly indicates the commercial importance of the triangular competitive district west of Weihsien, and accentuates the necessity of the canal as the only means of restoring China's rights in the Province, preserving the Open Door, and reviving the maritime importance of Chefoo. The canal practically parallels the Shantung Railway in the competitive district, and all the towns and cities can be more economically and efficiently served from Chefoo, by water, than by rail from Tsingtau.

Shantung is dependent upon railways for transportation to the coast, the province will remain under the political heel of Germany or some other Power during the unexpired period of the lease, or for the next eighty three-years. From the commercial standpoint therefore, the improvement of the Hsiao Ching-ho is imperative for the advancement of trade, and release from the monopoly of transport held by the Shantung railway. Chinese and other merchants are entitled to this protection to safeguard the unrestricted enjoyment and advancement of their legitimate trade rights menaced by the railway monopoly. From this viewpoint the expenditure of $5,000,000 is amply justified.

From the political viewpoint, as affecting the maintenance of the Open Door, and China's sovereign rights, the creation of this waterway is a sacred obligation imposed on the authorities in whose hands the nation has confided its interests. The reasons why the Government should give prompt and serious consideration to this matter are overwhelming. For sixteen years this remedy has been ever at hand to neutralize the province from the provisions of the Kiaochou Convention, and for sixteen years Governor after Governor has administered the affairs of Shantung and trod the traditional official path of promotion to the higher posts at Chihli and Peking, and did not hit upon this way to liberate the province from foreign influence. Yuan Shih-kai, Chow Tse-chi, Sun Pao-chi and other high officials directing the affairs of China at this time, have all passed through the ordeal of governing Shantung, and maintaining China's rights against the full current of German influence. These most trusted and tried defenders of China's sovereignty have now before them a logical and feasible method to counteract the insidious development of foreign designs for the domination of this province. It is not too late to make some effort towards rectifying the mistakes of the past. The fortunes of war, through which Japan succeeds, for the present at least, to Germany's rights in Shantung, must compel China to throw off her lethargy, and awaken to a full realization of the dangers menacing her liberty of action. In view of all these facts, is the expenditure of $5,000,000 Gold justified to convert the Hsiao Ching-ho into a navigable stream, and create a seaport at Tsinanfu? Is it worth $5,000,000 to effectively neutralize the province of Shantung, so that China's sovereignty can be upheld unimpaired and the door of equal opportunity maintained open for all nations? What will be the verdict of posterity on the present rulers of China, if through their indifference this opportunity is lost, and Shantung ultimately passes under the heel of a foreign overlord? Who can oppose or protest against the execution of such an obviously necessary improvement? Germany? She has no right to oppose the improvement of a waterway for the advancement of commerce. The Kiaochou Convention may be extended to cover such a scheme, if a foreign loan is sought. On the other hand it is well within the financial limits of the Government to proceed with this scheme, with its own funds. All that is required is $2,000,000 Mexican a year for five years. Surely between Peking and the Provincial Government at Tsinanfu, aided by the merchants whose trade will be benefited, and the property holders whose land values will be increased, it should not be difficult to devise ways and means to raise $2,000,000 per year for such a worthy, commercial and highly patriotic work of public utility. Germany cannot fairly interfere or oppose this.

For the present, serious opposition can therefore only emanate from Japan, who has taken over Germany's rights. If Japan is sincere in her declared intentions to restore Kiaochou to China, and is innocent of any political designs in Shantung, then her commercial and trade interests will be materially advanced by the construction of such a waterway, as from her base at Dairen, her light draft coasting steamers would enjoy the advantages of the canal, and enable her to maintain a legitimate and honorable lead over the traders of all other nations. It may then be taken for granted that any serious opposition to the scheme put forward by Japan, would be based on motives other than commercial.

We have viewed the question from the commercial, economic and political standpoints and we find that the only possible objection to it might arise from a veto by Japan, and this would imply intentions towards China in direct contradiction to her pledged word, and therefore cannot be entertained. If Japan does harbor any ulterior political designs in Shantung, the case of the Chinchow-Aigun railway is an ample precedent to convince other nations that she has the power, and will to exercise it, to protest against the execution of any scheme menacing her commercial and political supremacy by strengthening China's sovereign rights. Therefore if her attitude in Manchuria should be taken as a criterion as to what we may expect in Shantung, it is a foregone conclusion that notwithstanding the undoubted commercial benefits her trade would enjoy by the opening of the Hsiao Ching-ho, she would oppose the scheme to preserve unchallenged her political supremacy in the Province. As nothing has occurred to date, for the most hostile critic of Japan to doubt her honesty and good intentions in dealing with the situation in Shantung, we must assume that she will hand Kiaochou back to China, and that China will be called upon to recognize the friendly act of Japan by substantial rewards in some other quarter. The lease of the Kwangtung Peninsula, has only 8 years to run, when China has the right to again take possession after paying Japan for the expenditure on improvements. Is it probable that Japan would jeopardize her prospects of an extension to the lease of the Kwangtung Peninsula, for the sake of holding Kiaochou? If China's integrity is to be preserved in accordance with all the solemn agreements to this end, Japan must court her friendship, if her program in Manchuria is to be carried out. Any other supposition would imply that Japan intends to retain Kwangtung by force, if China refuses to extend the lease, and this in turn amounts to a virtual seizure of China's territory, and then, partition. Is it not better to credit Japan with honorable intentions, than to doubt her at this time? Is it not clear that Japan has everything to gain by adhering to her pledged word in restoring Kiaochou in return for an extension of the Kwangtung lease? Is it not clear that Japan can advance her economic interests in Shantung more effectively through Dairen, Lungkow and the suggested ship canal, than through the retention of Kiaochou, and subjecting her commerce to the 240 mile railway haul in competition with the cheaper 240 mile water route from Dairen to Tsinanfu?

We can now turn to the last and most important explanation of why the canalization of the Hsiao Ching-ho should be undertaken at once. No arguments can prevail against the following reasons based on broad humanitarian grounds for the preservation of life and property and the conservation of the district itself. This leads us up to a consideration of the ever present menace of "China's Sorrow," the great turbulent, rolling mass of liquid mud known as the Huang-ho or Yellow River. The vagaries of this river and the many catastrophes caused by the breaking of the dykes, in which whole cities, towns and villages have been obliterated and hundreds of thousands of lives swept to death, without counting the enormous property losses, has been chronicled time and again. A study of Captain Tyler's "Notes on the Yellow River," will convey an idea of the standing menace to the lives and property of millions of people, peaceably pursuing their vocations within the shadows of an ever present calamity. Living on the edge of a volcano is no more dangerous than living in the zone of destruction along the course of the Yellow River. The uncertainty of human life is identical.

Captain Tyler points out that the bed of the Ta Ching-ho, usurped by the Yellow flood in its last migration in 1854, has risen 18 feet in 20 years, or at the rate of over 1 foot each year. Writing in 1906, he states that the Yellow River cannot maintain its present bed for another 20 years, if nothing better than existing methods of control are used. He adds, "It becomes therefore a matter of anxious interest where, under these conditions, the river will go when it takes up its new bed."

Where will it break? It is inevitable. Over 1,000,000 taels are annually expended to keep it in its present channel, but the efforts of puny man cannot alter the inevitable course of nature or hold back the flood of liquid mud which the great lowess country beyond feeds into the maw of the resistless flood, and which year by year raises the bed of the river above the surrounding country. The break will come, but where?

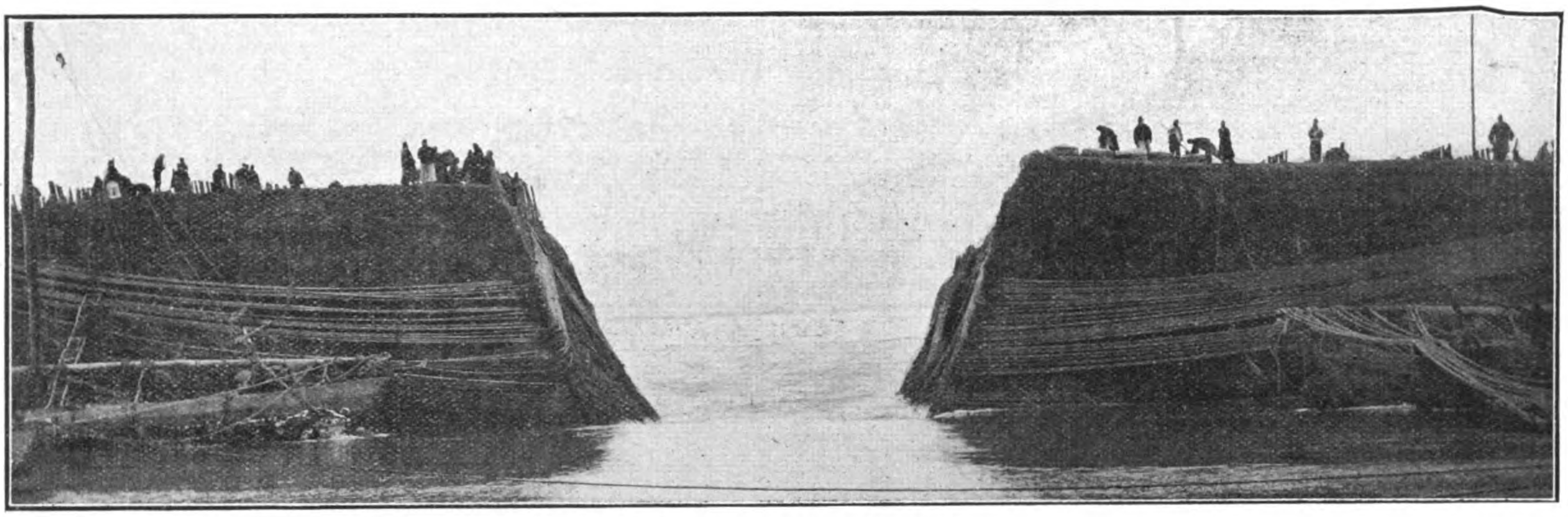
If the break occurs in the right bank of the Yellow River below Tsinanfu, the waters will flow to the south, and destroy the channel of the Hsiao Ching-ho, and wipe out of existence the many prosperous cities and towns in that district. This

possibility was the one which the Chinese authorities had in mind when Captain Tyler was ordered to conduct investigations and make his report. There is no water connection between the Hsiao Ching-ho and Yellow River and the flood would spread over the entire section without finding a channel to the sea. What is the obvious method to employ to protect the Hsiao Ching-ho and the cities situated on its banks and tributaries? A high protecting dyke thrown up on the northern bank of the Hsiao Ching-ho and carried around to the main Yellow River dyke at Tsinanfu, would serve as a formidable barrier to the flood waters of the Hoangho, escaping through a break in the southern dyke. In effect this is the one sure and effective safeguard for this region.

Suppose a brand new canal 120 miles long, 200 feet wide and 25 feet deep is dug from Tsinanfu to the sea, and the material excavated is all banked up on the northern shore of the canal; this will create a protective dyke to the new canal 25 feet high by 300 feet wide along its whole length or 30 feet high by 160 feet wide, a most effective protection not only to the canal, but to the countryside lying to the south of the barrier. Or let us suppose the existing Hsiao Ching-ho straightened and dredged to the same depth and width, and the soil deposited in one continuous bank protecting its northern shore. Is not this the logical and practical solution to the ever present menace of "China's Sorrow" in this district of Shantung? The excavated soil from a new canal, or the dredged material from the existing channel is thus profitably utilized in erecting the necessary barrier or protecting dyke against the break in the Yellow River. China effectively safeguards the lives and property of millions of her people, and creates a new international passage for the trade of all nations. To sum up; the excavation of a new canal, or the improvement of the existing one, is a boon to foreign and native shipping and trade, it frees the province from the monopoly of the Shantung Railway, it nullifies the provisions of the Kiaochou Convention, and neutralizes the province and guarantees the maintenance of the Open Door and China's sovereignty, and lastly it acts as a great humanitarian public work, safeguarding the lives and properties of millions of inhabitants, and preserves a rich district from inevitable destruction. Any one of the points justifies immediate action in carrying on the work, but viewing the project from all sides, it is seen that commerce, navigation, sovereignty, neutrality and humanity combined, demand serious

A WONDERFUL ILLUSTRATION OF CHINA'S LATENT STRENGTH.

As far as the eye can see, myriads of toilers are repairing a break in the Yellow River dyke. This demonstrates better than words, China's ability to dig the canal which will convert the inland capital at Tsinanfu into a modern seaport and effectively restore her political power in Shantung.



A Break in the Yellow River Dyke.

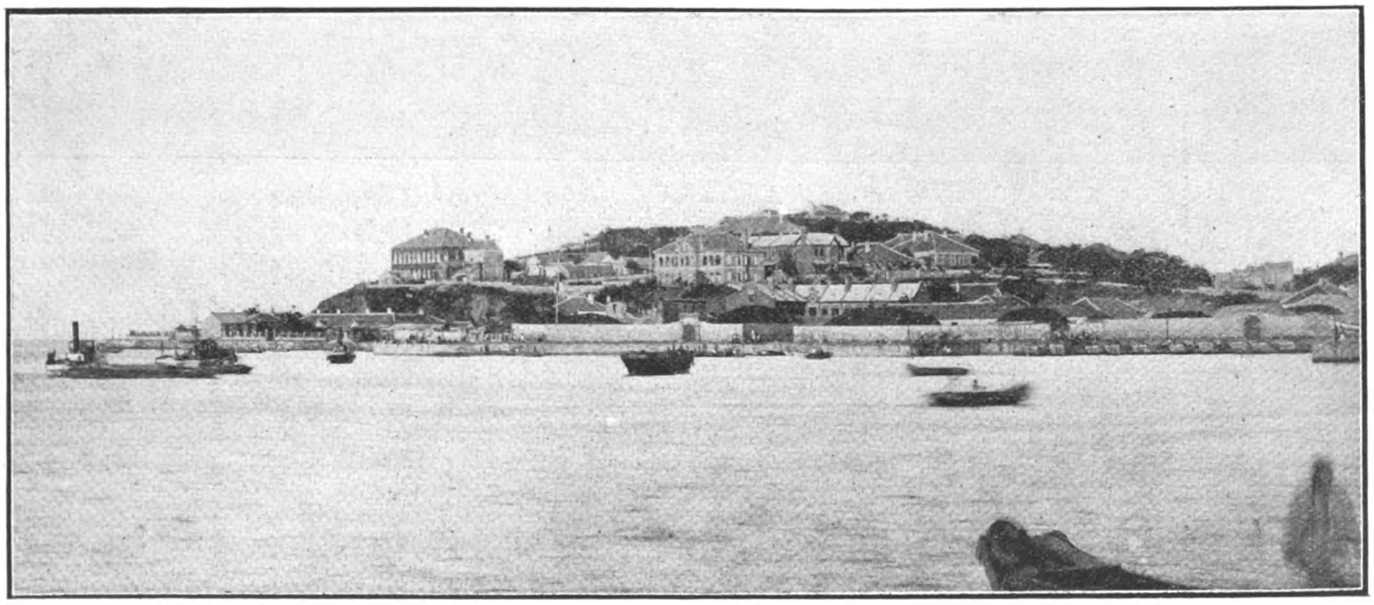
consideration by the Chinese authorities without delay. The sooner a competent engineer is employed to make a full report on this scheme, the quicker China can start to work and make up for lost time.

The Suggested Canal and Its Relation to the Port of Chefoo and the Proposed Chefoo-Weihsien Railway.

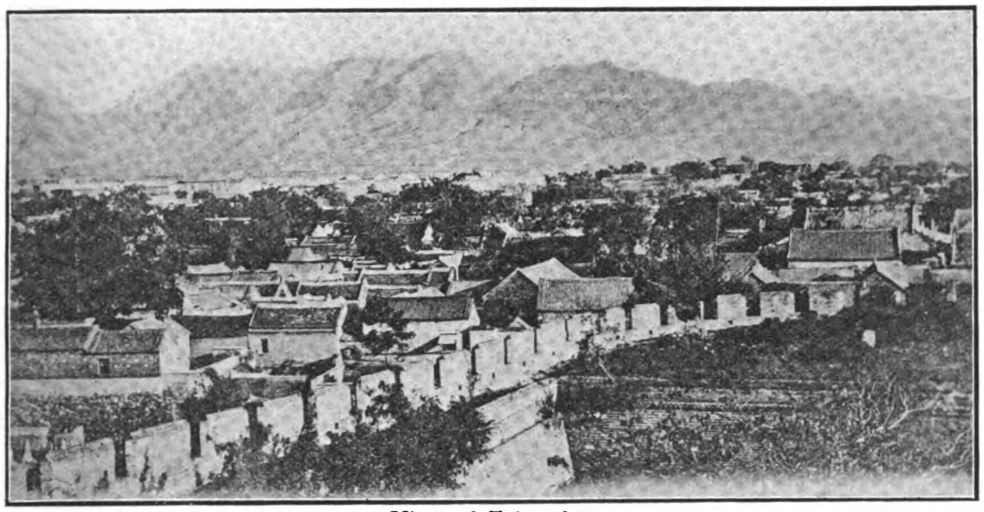
The one phase of the suggested canal which we have reserved for after consideration, is its relation to the port of Chefoo, and the proposed railway to Weihsien. The canal would undoubtedly reduce the profitable returns from the operation of this railway, to an extent which might possibly lead to abandoning the idea altogether. The Chefoo-Weihsien railway was proposed as the one means of reviving the trade of Chefoo, slowly expiring under the throttling monopoly of the Shantung Railway, which diverted all the profitable traffic of the rich productive district to the German port of Tsingtau.

We have pointed out in previous articles in THE FAR EASTERN REVIEW that the proposed Chefoo-Weihsien line if ever built, would at its best be only a local road of special importance to Chefoo alone, and of little practical or economical advantage to the general trade of the Province. If the road can be profitably operated on the traffic receipts of the few towns and cities located along the 180 mile fringe of sea coast between Chefoo and Weihsien, its construction is justified, but if its contemplated profits are to be derived from the transportation of the produce of the great competitive district beyond Weihsien, it is certain that they can only be collected from an excessive freight tariff or additional tax on commerce. It stands to reason that as long as Germany, or any other Power, absolutely controls the main trunk railway, freight rates will be enforced in the competitive district beyond Weihsien, that will operate against shipments via Weihsien to Chefoo. The haul from Weihsien to Chefoo is about 180 miles, and from Weihsien to Tsingtau about 110 miles. Without the imposition of discriminating freight rates, Tsingtau has the commercial advantage over Chefoo, for the railway freight traffic from the rich zone west of Weihsien. Whenever the management of the Shantung railway detected any undue movement of staple pruducts from points west of Weihsien destined for Chefoo, the rates would be manipulated at once in favor of Tsingtau. The misfortune of location therefore militates against any development of Chefoo into a great Chinese shipping port for the control of the Shantung market through railway connections. Chefoo's sphere of commercial activity is restricted, and under the most favorable conditions cannot extend beyond the limits of the mountainous district of the Shantung promontory. A line drawn from Lai Chou-fu eastwards to Haiyang-hsien delimits her zone of trade influence, and in this confined area, she must compete with Weihaiwei and Lungkow as open ports for foreign shipping.

The proposed railway would undoubtedly have a most stimulating effect on the local trade of that district between

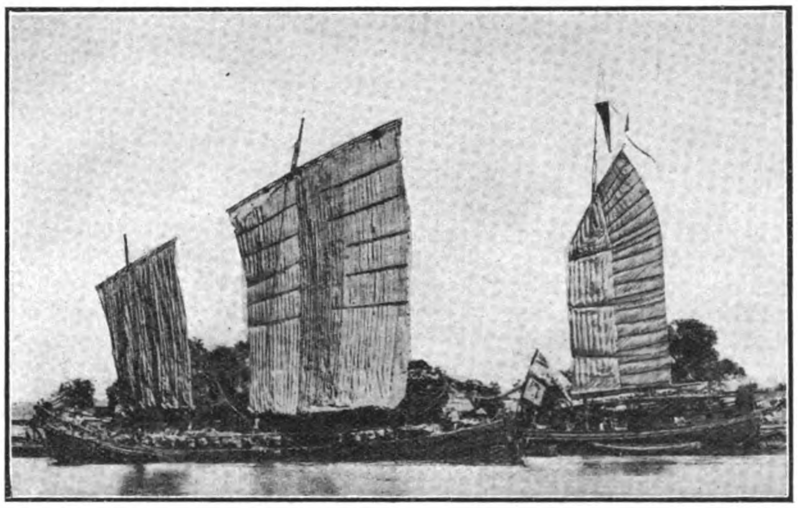


The Port of Chefoo.

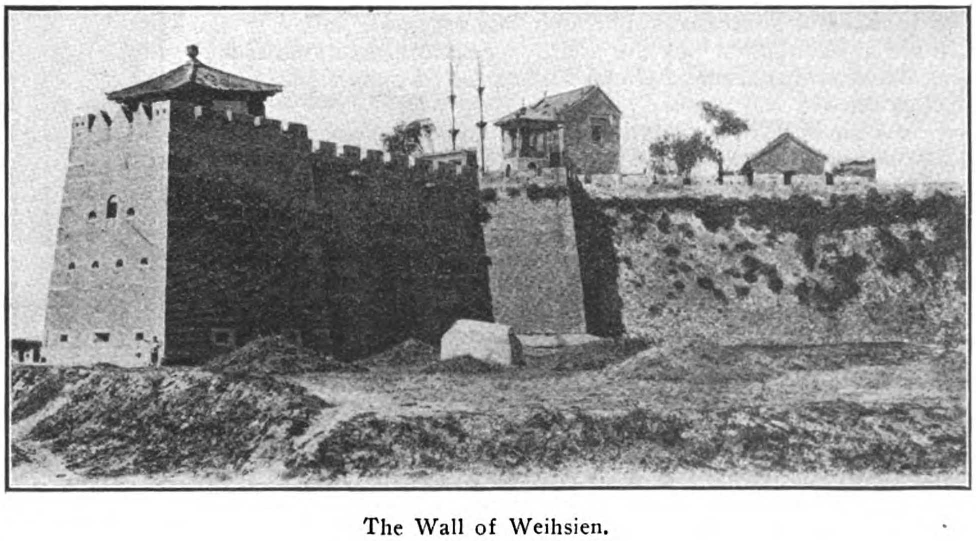


View of Tsinanfu.

Weihsien and Chefoo, but with Japanese interests entrenched in and controlling the port of Lungkow, located at the center of the line, it is clear that the latter would divert all the Japanese trade to and from the interior into their stronghold, and employ their own subsidized steamers for carrying the exports to Dairen, Korea or Japan. It will be seen therefore, that the construction of a ship canal from Tsinanfu to the Gulf would not materially affect the future railway traffic situation of Chefoo. The railway could not assist Chefoo to secure the coveted business west of Weihsien. The proposal canal, on the other hand will accomplish what the railway is powerless to perform. The promoters of the Chefoo-Weihsien railway and the vested interests of the port, have only been concerned about the future of Chefoo, giving little thought to the interests of the Tsinanfu merchants, who would pay the long railway bill for the maintenance of Chefoo's prosperity. Chefoo wants the railway, and the Chinese Government is willing to pay for it, but how about the other end? Are not the trade interests of Tsinanfu and the other 13 Hsien and two Fu cities (not to speak of the other towns further inland) of equal or greater importance than the claims of Chefoo. Have not these cities a right to demand the expenditure of a sum to benefit their trade and release them from the present railway monopoly, which would only tax them higher if Chefoo's demand is complied with? The force of the argument rests with the claims of Tsinanfu, Chang-Chin hsien, Tsou-Ping hsien, Kao-Yuan hsien, Po-Hsing hsien, Chang-Shen hsien, Hsin-Ching hsien, Le-An hsien, Lin-Tzu hsien, Ching-Chow fu, Show-Kuang hsien, Ching-Chen hsien and the other towns located in the competitive triangle west of Weihsien, who are now subject to the railway monopoly. If any money is to be expended in Shantung by the Chinese Government its first duty is to the capital city and the adjacent towns, by constructing an international waterway which will serve them all, and liberate them from the railway monopoly. If Chefoo desires a railway to Weihsien, local capital should finance it, as it will benefit only local interests, and as far as we can see, it will only be to their advantage to construct the line as far west as Hwanghsien, as beyond that point they are simply spending money for the ultimate profit of the Japanese controlled port of Lungkow. Chefoo has been outmanouvered. First the Germans came and diverted its commerce to Tsingtau, and while Chefoo was struggling to recuperate, along come the Japanese, who unostentatiously select the obscure port of Lungkow as a base, open a bank, obtain control of all desirable property, divert their trade through this new channel, and then compel the Chinese Government to open it as a treaty port. They remain quiet while Chefoo and the Chinese move heaven and earth to build a railway which must pass within a few miles of Lungkow, and when completed, astute, business-like Japan simply taps it, and diverts all its trade, and saves the cost of 75 miles of railway haul, and the charges for the improvement of the port of Chefoo. If the railway is ever built the Germans or their successors will arrange matters so that not a ton of through freight for export will ever pass over the line. Still Chefoo and the Chinese Government are determined to do the one thing they ought not to do. The construction of the suggested canal will do more to revive the port of Chefoo than the railway. Chefoo will always remain the one great deep water port on the Chihli coast under Chinese jurisdiction, where ships from Europe and America will load and unload. It will be the great international distributing point for the Shantung trade, and the port will regain the maritime position wrested from her by Tsingtau. The lighter draft coasting steamers will make Chefoo the outer deep water port of Tsinanfu, and she will then only have to compete with Dairen. It is already assured that Chefoo, will untimately lose the Japanese trade, which will pass through Lungkow, but she will make up for that loss through resuming her lost position over Tsingtau. The water distance from Chefoo to Tsinanfu, through the proposed canal is only 240 miles, or the same distance that separates Tsinanfu from Tsingtau by the railway. From Chefoo to the mouth of the canal and the heart of the competitive district is only 120 miles, or the same as the railway distance from Tsingtau. In fact Chefoo can compete with the railway in all the towns of the productive district with water freights against the railway. It is clear then, that by the construction of the canal the commercial monopoly of Tsingtau will be restricted to the unremunerative district east of Weihsien, and the control of the richer and more profitable zone, will be restored to Chefoo. Although Japan from her base at Dairen, will have a decided advantage, yet other nations



Cargo boats in the Grand Canal.



The Wall of Weihsien.

will be placed on the same footing through the deep water port of Chefoo, and the door which was closed through the provisions of the Kiaochou Convention, and the building of the German railway, will be opened again for the equal and honorable competition on all nations. The province will be effectively neutralized, and China's sovereign rights firmly safeguarded.

TELEPHONE SYSTEM AT TSINANFU

The telephone system at Tsinanfu is owned and operated by the Shantung Provincial Government. During 1912 plans were undertaken for the improvement and extension of the System but up to the present time the plans have not been entirely carried out.

The old system had been in use several years and the number of subscribers had increased considerably, it was deemed advisable to change over to a full metallic or two-wire system and at the same time instal new switchboards with increased capacity and of modern type.

During the summer of 1913 the new switchboards were installed and put into service, also a considerable number of new telephones were installed to replace the old ones. The prospected change of the outside lines to full metallic or two-wire, was not done entirely and there are a considerable number of the subscriber's lines still working on the single wire system.

For purposes of telephone distribution in Tsinanfu there are two districts and two separate exchanges. One district comprises the territorry inside the city walls and the other district comprises that portion of the city outside the walls, which has been assigned by the local Chinese Government as the business and residence district for foreigners, and which is commonly called the Settlement.

The City exchange has an equipment for 300 lines and the Settlement exchange an equipment for 200 lines. At present there are about 450 subscribers altogether. The distance between the two exchanges is about 2½ miles and there is a 15-pair lead covered aerial cable connecting the two exchanges for purposes of trunking telephone calls from one to another.

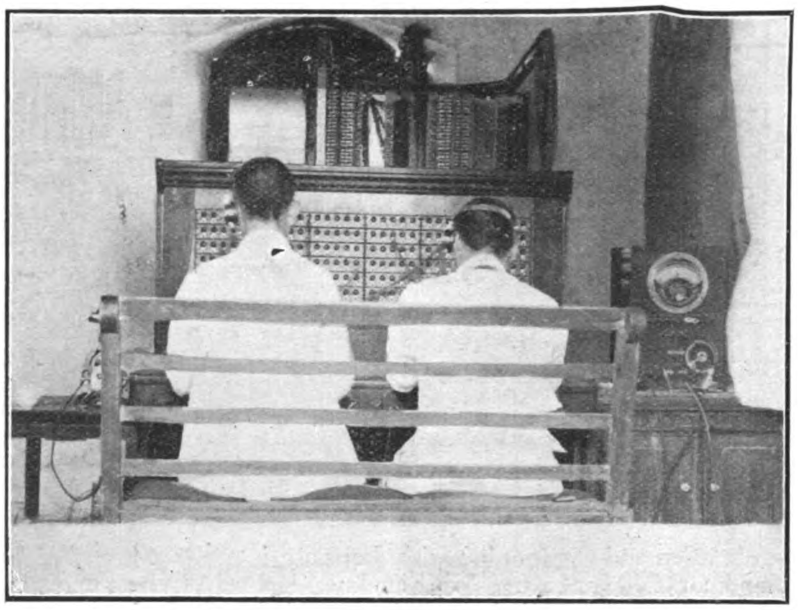
The Switchboards are the Western Electric Company's No. 1250 and No. 1230 type with ball type self-restoring combined jacks and signals. The action of the operator in plugging into the jack to answer a call from a subscriber, automatically restores the signal to its normal position. thus providing for greater rapidity of service on the part of the operator than it is possible to obtain with the old type drops, which have to be restored by hand. Also the construction of the ball type signal is such that it extends out very slightly from the face of the switchboard and therefore cannot be damaged by carelessness on the part of the operator, as could the old type drop with shutter.

Each of the switchboards is equipped for two operators and each operator's position contains 15 pair of cord circuits, for completing connections between the subscriber's telephones. The cord circuits are arranged with ringing and listening keys and with clearing out signals so that subscribers at the end of a conversation can signal the operator that they are finished by ringing off.

The switchboards are so arranged that additional operators' positions and subscribers line equipment can be added in the future as desired. Upon the addition of more positions trunking between them will be effected by means of lamp signal transfer circuits.

At the back of each switchboard is located a No. 1430 type distributing frame. This frame serves as a terminal rack for connecting the outside lines and also serves as a mounting for the protective apparatus, which consists of fuses, heat, coils and lightning arresters which protect the switchboard apparatus from damage which otherwise would be caused by lightning, electric light current or other abnormal electric currents.

All wiring between the switchboard and distributing frame is carried in switchboard cable on iron racks, so that the wiring is very compact and neat. The outside lines are carried in lead covered cable from the distributing frame to distributing boxes located on poles immediately outside the exchange, these distributing boxes are equipped with lightning arresters to provide additional protection against damage from lightning. From these distributing boxes the outside lines are run on poles as open wires or in lead covered cable as the case may be, to the subscribers' telephones.



Settlement Exchange, Tsinanfu. Front view of No. 1230 Switchboard, No. 1407 Testing cabinet at the right.

Alongside of each switchboard is mounted a No. 1407 Testing Cabinet for the purpose of making tests on the outside lines and switchboard circuits. With the aid of this cabinet troubles which may occur on the lines can be discovered and located at once, and thus repairs may be carried out without delay or serious interruption in the service.

All parts of the switchboard and distributing frame are easily accessible for inspection and the few occasional repairs and adjustments made necessary at times on account of abnormal conditions, may be effected without difficulty and delay.

The subscribers' telephones supplied are of several different types. Some are wall type with fixed transmitter and others are wall and desk type with microtelephones, so that subscribers tastes may be suited in the matter of types.

Installed in connection with each telephone in subscribers' houses, is a No. 58-A protector consisting of fuses and lightning arresters which serve to protect the telephone from damage which might be caused by lightning and abnormal electric currents.

The switchboards, exchange equipment and telephones were manufactured by the Western Electric Company and supplied through their China agents Messrs. Arnhold, Karberg & Co.

City Exchange, Tsinanfu. No. 1250 Switchboard, showing No. 1430 distributing frame at the back. No. 1407 Testing Cabinet at left of Switchboard.

THE STATUS OF THE SHANTUNG RAILWAY

The seizure of the German Shantung Railway as a spoil of war, and the intention to operate the line under Japanese management, raises the question as to the legality of such a procedure. The argument is advanced by Japanese witers, that as the line is German property operated under the provision of a lease granted to the Imperial German Government by China, it must be considered as belonging to the German Government, and therefore a legitimate object of confiscation.

The real points at issue are clearly defined by a study of the various contracts bearing on the Railway; first, the Kiaochou Convention, second, the Railway Concession granted by the Imperial German Government to the Shantung Railway Company, and third, the Regulations for the Construction and Operation of the railway agreed to by the Chinese Government. These three contracts are reprinted herewith in full.

The Kiaochou Convention and its railway concessions to Germany, define the latter's rights as follows:

I. The Chinese Government sanctions the construction by Germany of two lines of railway in Shantung. The first will run from Kiaochow and Tsinanfu to the boundary of Shantung province via Wei-hsien, Tsinchow, Pashan, Tsechuen, and Suiping. The second line will connect Kiaochow with Chinchow whence an extension will be constructed to Tsinan through Laiwu-hsien. The construction of this extension shall not be begun until the first part of the line, the main line, is completed, in order to give the Chinese an opportunity of connecting this line in the most advantageous manner with their own railway system. What places the line from Tsinanfu to the provincial boundary shall take in *en route* is to be determined hereafter.

II. In order to carry out the above-mentioned railway work a Chino-German Company shall be formed, with branches at whatever places may be necessary, and in this company both German and Chinese subjects shall be at liberty to invest money if they so choose, and appoint directors for the management of the undertaking.

III. All arrangements in connection with the works specified shall be determined by a future conference of German and Chinese representatives. The Chinese Government shall afford every facility and protection and extend every welcome to representatives of the German Railway Company operating in Chinese territory. Profits derived from the working of these railways shall be justly divided pro rata between the shareholders without regard to nationality. The object of constructing these lines is solely the development of commerce. In inaugurating a railway system in Shantung, Germany entertains no treacherous intention towards China, and undertakes not to unlawfully seize any land in the province.

IV. The Chinese Government shall allow German subjects to hold and develop mining property for a distance of thirty li from each side of these railways, and along the whole extent of the lines. The following places where mining operations may be carried on are particularly specified along the northern railway from Kiaochow to Tsinan, Weihsien, Pa-shan-hsien and various other points; and along the Southern Kiaochow-Tsinan-Chinchow line, Chinchow-fu, Laiwuhsien, etc. Chinese capital may be invested in these operations, and arrangements for carrying on the work shall hereafter be made by a joint conference of Chinese and German representatives. All German subjects engaged in such works in Chinese territory shall be properly protected and welcomed by the Chinese authorities, and all profits derived shall be fairly divided between Chinese and German shareholders according to the extent of the interest they hold in the undertakings. In trying to develop mining property in China, Germany is actuated by no treacherous motives against this country, but seeks alone to increase commerce and improve the relations between the two countries.

In addition to securing a 99 years' lease on the territory of Kiaochou, Germany acquired the right to construct a railway from within the leased territory to Tsinanfu. Her rights in the territory were clearly juridical, as the lease provided that Germany should pay for all land expropriated for special purposes. In the matter of the railway, Germany simply obtained a franchise from the Chinese Government, to be executed in due time by a private China-German Stock Company. In other words, the sovereign rights of China were delegated to Germany, to build this railway with private capital, under rules and regulations to be defined by the German Government.

The Kiaochou Convention was signed on March 6, 1898. A syndicate headed by the Deutsche-Asiatiche Bank was shortly afterwards organized in Berlin, to incorporate the Shantung Railway Company, and apply for the concession from the Imperial German Government. A study of the concession granted to this Company fails to reveal any indication of an allotment of official shares set aside, or that any capital was subscribed for by the German Government. On the face of it, the document is an ordinary commercial charter granted to a private Corporation for the construction and operation of a railway, under certain restrictions enforced by all Governments for the proper supervision of a public service corporation. The shares were for public subscription only, and facilities were offered so Chinese capital could participate. The company was organized with a capital of Marks. 54,000,000 divided into 54,000 shares of 1,000 marks each, which were not all paid up until 1904. Certain founders' share were set aside for the promoting syndicate headed by the Deutsche-Asiatische Bank. and in which the German Government does not appear, which shares have the right to an important participation in the profits. The distribution of profits is fixed under the articles of incorporation as follows:—

Five per cent of the profits are placed to a reserve fund, until this reaches a tenth of the capital (Marks. 5,400,000), another five per cent is set aside for special reserve, and then a sufficient sum to pay a dividend of five per cent on the share capital. If any surplus exists after providing for the above, and after deducting five per cent for the Board of Directors, the Government of Kiaochou is entitled to receive the following payments: If the dividends of the Company exceed 5 per cent of the paid up capital, the Government of Kiaochou receives five per cent of any surplus between 5 and 7 per cent; 10 per cent of any surplus over 7 to 8 per cent; 25 per cent of any surplus over 8 to 10 per cent; 33 ⅓ per cent of any surplus over 10 to 12 per cent and 50 per cent of any surplus over 12 per cent. In the distribution of the profits, two-thirds are set aside for the shareholders, and one-third to the holders of founders' shares.

The German Government holds no pecuniary interest in the company, except the right to a participation in the profits when they exceed a reasonable return. The Government subscribed no funds, held out no guarantee on principal or interest; the concession was not sold for a monetary consideration, no special tax was imposed, and the only consideration received for the concession was a tax on the profits when they exceeded a certain figure. Until the profits exceeded five per cent of the capital the Government derived no benefit, and as the line was operating several years before this stage was reached, the Government participation was therefore nil. In the matter of the concession the German authorities simply proceeded along lines recognized and followed by other Governments, who seek to derive a fair revenue for the State from the disposal of public service franchises. This participation in the extraordinary profits in lieu of corporation and income taxes, and special assessments and other tolls on business in no way implies a financial interest in the enterprise, or makes the Government liable as a shareholder or partner. The only protection or guarantee extended to the Company to ensure a profitable return on its capital, was the implied monopoly of the field, and the promise that no other concession would be granted for a parallel line, and that the Company would have the right, if they requested it, to construct the other Shantung railways embraced in provisions of the Kiaochou Convention.

The German Government fully and wisely protected itself against a failure on the part of the Company to live up to its Agreement to construct and open the line by a certain date, by enforcing the penalty of taking over the work itself or handing it over to a third party. This protecting clause in various other forms is a feature of all standard Government contracts. If the Shantung Railway Company, was an official enterprise with state funds invested in it, the Government would not have drawn up such stiff specifications for the faithful execution of the work. As a party to the contract both ways, it could not have properly exercised its authority, if its other partners failed to live up to their part of the contract. As to the rules regulating tariffs and train service, this is a prerogative reserved by all Governments for the protection of the public and does not imply any special interest in the line. The Japanese contention that the Shantung

railway is German Government property, because it constitutes an extension into Chinese territory of the Kiaochou lease, holds good then only as to the juridical rights exercised by the German Government in the regulation and supervision of a public carrier corporation. The physical property of the railway, land, road bed, rolling stock, stations, warehouses, terminals and wharves, are owned by the Shantung Eisenbahn Gesellschaft, a purely private share corporation whose rights to undisputed possession are incontrovertible. The rights of private property are recognized in civilized warfare. Japan may seize and operate the Shantung Railway as a military measure, and be well within her temporary rights. She may even confiscate the railway, but the rights of private property in international law stipulate that she should pay a reasonable price to the owners in return, and, in addition, an indemnity for the use of the line during the time the owners were forcibly withheld from legitimate enjoyment of their property.

If it is admitted that the German Government holds no shares in the Shantung Railway Company, but simply exercises its undoubted right to supervise and regulate its operations, and that the Company is a private one, it becomes evident that confiscation of the property by Japan, must be followed by some equitable and honorable compensation to the owners. Not only must Japan pay a fair price for the line, but also a fair indemnity or return for the use of the line until the final settlement is reached. A case in point occurs to us. When the Americans were operating against the Filipino insurgents in the Island of Luzon, it became necessary for the army to take possession of and operate the Manila Railway, owned at the time by a purely British Corporation. Up to the close of the insurrection, the British Company was forcibly deprived of the lawful enjoyment of the profits arising out of the operation of the line, and in consequence a heavy claim for damages was filed with the American Government. The seizure and occupation of the railway was rendered absolutely essential by the exigencies of the military situation, and there were other reasons which might have justified the American Government in refusing to entertain the claim. The failure to pay this claim at once was the cause of some friction, but it was eventually amicably adjudicated to mutual satisfaction. The precedent established is applicable to the Japanese seizure and operation of the private controlled German railway in Shantung. There may exist good Japanese reasons why an indemnity for the use and operation of the line should be refused to the German shareholders, as they are the enemy, but we can see no grounds for Japan to legally confiscate the property, without recompensing the owners for its loss. If Japan succeeds to the German Government rights in Shantung under the provisions of the Kiaochou Convention, she simply inherits the juridical rights to supervise and regulate the operations of the private German Company, in addition to the right to purchase the property at the expiration of any five year period under conditions fully and clearly set forth in the concession. The purchase price is determined by the payment of twenty-five times the amount of the average dividends paid during the last five years from its earnings. This then is the situation confronting Japan. If the rights of private property are respected, she must face the prospect of purchasing the railway from the shareholders, under the above conditions. The capital of the railway Company is Marks 54,000,000. For the last five years the following dividends were declared:—

1908	.0475 per cent.
1909	.06 „
1910	.065 „
1911	.06 „
1912	.075 „
	.3075 per cent.

an average of .06125 for the last five-years. Twenty five times this is 153.125 per cent. This means that the value of the railway property alone would amount to Marks. 82,687,509 (£4,134,375) to which must be added the value of the mines and the steel works, now owned by the railway company. The capital of the railway company was increased by Marks 6,000,000 to take over the mines, and then by an additional Marks, 10,000,000 to erect the steel works. Its capital is now Marks, 70,000,000 or 16,000,000 more than is represented by the railway property. If we add 16,000,000 Marks as a fair valuation for the mines and steel works, which as yet have paid no dividends, we have Marks 98,687,500 or roughly £5,000,000 as the actual market value of the combined properties, Japan would be called upon to pay the private shareholders for the confiscation of their property. It is idle for Japanese publicists to adhere to the fiction of the railway being Government property in view of these facts. The railway was one thing, and the mines another, both being distinct private commercial entities, though affiliated by an interlocking directorate, representing the larger banks behind both enterprises. The railway struggled through its early stages, and owed its prosperity in part to the traffic of the Mining Company. The mines did not pay, and the railway company purchased the shares of the mining shareholders, and assumed control. The German Government had absolutely nothing to do with this ordinary business transaction between two private and independent commercial organizations, whose rights over the control of their property, and the lawful enjoyment of the profits arising therefrom have been ignored and rejected by Japanese seizure of the property for military purposes.

It is to be presumed therefore, that in the event of the ultimate victory of the Allies over Germany, and a separate treaty being signed between Germany and Japan, by which the latter will succeed to the rights embraced within the provisions of the Kiaochou Convention, that Japan will be called upon to deal honorably with the private shareholders of the Shantung Railway Company by an impartial valuation of their property, by competent authorities, and payment in accordance with their decision. Otherwise, the whole fabric of the inviolability of private property under international law controlling warfare, will tumble to pieces, and with this foundation swept away, it will be extremely difficult to restore that confidence in the money markets essential for investment of capital in new foreign enterprises, Japan would be the first to suffer, as all confidence in her willingness to abide by established European usage, would be destroyed, and her future loans ostracised abroad. In the heat of conflict, and intense national antipathies aroused by the war, it is all very well to talk of confiscation and seizing the Shantung Railway as a spoil of war, on the supposition that it is part of the Kiaochou lease, but when the war is over and the shattered organization of international finance is restored to its normal working order, closer scrutiny will be given to those incidents which undermine and make impossible future confidence in foreign investments. If Japan, by right of might, should arbitrarily refuse to compensate the private shareholders and owners of the Shantung Railway Company, and insist on an absolute confiscation of their property as a spoil of war, there might be no power to restrain her from doing so, but she would pay the price nevertheless, by a loss of confidence which would find expression in the money markets of the world. It would appear then that the utterances of a section of the Japanese Prese, can not accurately reflect the real sentiment of the Government, who must be giving serious thought to the problem involved by the seizure of the railway and mines, and of finding an honorable and equitable solution.

If Japan determines to confiscate the property, any international court of arbitration would undoubtedly decide in favor of adequate compensation to the private shareholders. If we accept this, it means that under the terms of the Charter of the Railway Company providing for the acquisition of the property by the Government, Japan would be called upon to pay the shareholders the sum of £5,000,000.

Where will Japan raise this sum immediately after the war? If she is unable to buy out the shareholders, and insists on operating the line, the only just course to pursue, would be to act as the trustee for the shareholders, and turn over to them the annual profits, until such time as she can indemnify them outright. This in turn would call for the admission of German represention in the Directorate and accounting department, to protect the interests of the shareholders.

If Japan accepts this principle in guiding her future attitude towards the Shantung Railway and mines, and does not feel justified in paying the sum of £5,000,000 for the unrestricted control of the property, she may decide to include the railway

and mines in restoring Kiaochou to China. In that event, China's sovereign rights delegated to Germany in the Kiaochou lease, will be restored to her, and on her shoulders will rest the responsibility of solving the problem of the private shareholders. This would mean that China would be compelled to pay the £5,000,000 to the German shareholders to legally and peacefully enjoy the control and profits of the railway and mines. And from where is China to raise this money?

The question naturally arises, is the property worth £5,000,000? Deducting the value of the mines and the uncompleted steel works, and appraising the railway at Marks 82,687,500 or £4,134,375, the operating results under efficient European management, clearly indicate that the property is well worth this sum, and more. Under the monopoly accorded it by the terms of the Kiaochou Convention and its Charter from the German Government, there is little doubt that in a few years, the dividends would have risen to ten per cent, and there is no reason why they should not be still further increased, if the record of the Peking-Mukden line is a fair criterion. The value of the line therefore hinges largely on the maintenance of the monopoly. Destroy that monopoly by nullifying the provisions of the Kiaochou Convention, and permit competition to enter the province, either by the Chefoo-Weihsien line, or the excavation of the Hsiao Ching-ho ship canal, and the value of the railway as a dividend producer is cut in half, and its sphere of real activity relegated to the 110 mile unprofitable zone between Tsingtau and Weihsien. The Chefoo-Weihsien line would not impair the value of the Tsingtau line, as the latter holds the power to enforce discriminating rates against the former on through traffic. The value of the main line, can only be seriously affected through the construction of the suggested ship canal from Tsinanfu to the sea. The right to carry out this improvement rests with the Chinese Government. Therefore the attitude of the Chinese Government will influence the ultimate value of the railway. If the Chinese determine that their own interests are paramount over those of Germany and Japan, and decide to construct the Hsiao Ching-ho canal, the value of the Shantung railway shares will decline to at least half their present value. The construction of the canal will make the line a useless luxury to either Germany or Japan in the future, as the shipping center will again shift from Tsingtau to its original base at Chefoo. There would then be no profit in Japan paying the price to the German shareholders, as the railway could not maintain the commercial prominence of Tsingtau against Chefoo and the cheaper all water route through the heart of the competitive district to the provincial capital at Tsinanfu. Japan could then reap no profit from a base at Tsingtau, but would be amply rewarded by the extension of her commerce from Dairen.

If Japan decided that the retention of the railway is too costly, and restores it to China in connection with the lease of Kiaochou, and China is compelled to assume the obligation of acting honorably with the German shareholders, her valuation of the property would be influenced by her attitude towards the suggested canal. The expenditure of £1,000,000 on the canal, would reduce the value of the railway as a revenue producer to at least one half its present value, or £2,000,000. It seems clear then that if Japan restores the line to China, with the obligation to indemnify the shareholders, China's interests would demand that she expend £1,000,000 on the canal, which would be repaid 100 per cent by the decreased cost of the railway. With this possibility in view, is it worth while for China to undertake the construction of the Canal at once? Japan, Great Britain and the other countries at war with Germany may devise their own plans for the ultimate disposition of Germany's interests in Shantung without consulting China or other Powers who enjoy equal privileges, but China herself holds the whip hand in Shantung, which nothing short of deliberate seizure of the Province by a foreign Power can wrest from her.

A little neutral advice on the neutralization of Shantung at this time, would undoubtedly awaken the Government at Peking to a realization of its strength in this matter, but it is almost hopeless to expect that China will be guided aright through this crisis in her history. No influence short of actual force, and the utter disregard of the rights of the weak, which Britain has sworn to protect, should stand between China and this avenue of restoring her influence in the sacred province of Shantung. Where there's a will there's a way, and China should exercise that will at once.

GEO. BRONSON REA.

EGG AND ALBUMEN INDUSTRY

The exportation of eggs from Tsingtau in 1910 was 1,821,183 dozens, against 955,409 dozens in 1909, the bulk going to Vladivostok. One factory engaged in the export of prepared dried eggs and the manufacture of egg cognac, egg noodles, and albumen also uses about 3,300 dozens a day.

While this industry has existed here for several years, the products being shipped to Germany, no effort was made until recently to secure trade in the United States. A sample shipment has gone forward under the requirements of the American pure-food law, and it is confidently expected that a thriving business will result. The egg supply is drawn from the southern part of Shantung, Chihli, and Honan Provinces, and with the latest German machinery a local firm has entered upon the business with hope of a substantial extension. The Columbia company, started in 1909, is a limited liability concern, whose export abroad in powder form exceeds 800,000 lbs. The nature of the machinery and the system employed in making the various products are held secret, and the only information obtainable has been in connection with the sample shipment mentioned.

Buying depots are established at Chowchow, Tsingchow, Weihsien, and other important places along the Shantung Railway line, and buyers are sent all over the province, purchasing eggs. For packing, empty cases of coal oil are used. Each of these fully packed will weigh about four hundred catties.

The price was 21 tiao per thousand in former days, but now it is raised as high as 27 tiao. As there is no chaff in the province owing to the absence of rice cultivation, wheat-straw or kaoliang stalks, beaten soft, are used in place of chaff in packing eggs.

The eggs arrive at the factory packed in old kerosene oil boxes. They are carefully examined by being held close to a strong electric light which shows the least defect. The fresh ones are washed and passed on to several Chinese boys who open them and separate the yolk from the white.

With the aid of a suction pump the yolk passes through a large pipe into a vacuum in the machine and is dried in 15 seconds. It is then passed on to a large receptacle into which the matter falls in the form of flakes which look clean, have a good color and a fresh odor. The flake is again passed through a machine and comes out in a powdered form ready for shipment. It is said that this product can be kept indefinitely if stored in a dry, cool place.

The whites of the eggs are put in small glass-bottom trays about a foot square and placed on shelves in a room having a temperature of 40° to 55° C. After thoroughly drying the material is broken up in small pieces and ready for export. These sheets are sometimes powdered or reduced to a crystal form resembling granulated sugar.

The factory is taxed to the limit of its capacity and it is the intention of the company to enlarge.

A market for eggshells has been recently established in Germany, where they are used as poultry feed.

To make 10 kilos (22 pounds) of dried yolks 1,500 eggs are required; to make 10 kilos of whole dried eggs 1,000 must be used, while 2½ kilos (5½ pounds) of albumen are made from the whites of 1,000 eggs.

The price of the whole dried egg is about $0.73 Mexican (31 cents United States currency) a pound, of albumen $1.03 Mexican (44 cents), of dried yolk about $0.53 Mexican (24 cents). Shipments are made in tin-lined cases holding 50 and 100 pounds.

Another German firm (Karl Elers) also opened a factory in 1911, the output for the first year amounting to over 300,000 lbs. The specialty of this factory is the dry product which is sold under the trade name of "Sinaqua." Other factories were projected by German firms.

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THE WRITING ON THE WALL

The probably groundless suspicions with which the Chinese have regarded the operations of the Japanese forces in Shantung have, if anything, increased since the capture of the fortress. Although there has been no ebullition of public opinion, it is noticeable in official circles that lively fears are entertained that Japan will make Shantung her stepping stone to larger conquests, pseudo-economic if not actually political, in China Proper. In the eyes of the Chinese one method of acquiring a hold is as bad as the other. Rightly or wrongly they look upon Japan's economic advancement as militating against the welfare of China, discarding the fact that the advantages of trade are reciprocal, and clinging to the belief that Japan's motives are solely and wholly concerned with a scheme to secure political dominance in the country.

At the present moment it is inopportune to discuss whether these beliefs are right or wrong, for Japan has given her word to the world that she will play the game by China, and it is only fair to assume that she will do so until definite evidence is forthcoming to the contrary. So far as Japan is concerned her future is better assured by the development of friendship with China than in estranging her and creating hostility; and Japan has a distinctly happy opportunity now to show that the suspicions voiced against her are not only unfounded but are unworthy a thinking people. It is not to be expected, of course, that Japan will hand Tsingtau back to China as a free and untrammelled gift. China has not done much to deserve such a demonstration of magnanimity and generosity. But what China has the right to expect is that Japan will not make the cost too high or make demands for compensation which it will be undignified for China to accept.

The announcement made recently by the President that the presence of Japanese in Shantung will make for accentuated diplomatic difficulties which will call for careful and patient treatment, seems to indicate that the necessity for sagacious statecraft is gradually being recognised. That tardy recognition comes almost at too late an hour. The trials and tribulations to which China and the Chinese are heir can be traced almost exclusively to the fundamental blunderings of departed officials; purblind men who, in their ignorance of the trend of the world's political and economic currents, imagined that disdainful disregard of the "barbarian" and his ways would be sufficient to render China immune from them. Neglect to recognise that no country such as China can wall herself in and stand aloof from the vast movements which have for decades been remodelling conditions in the world was the primary cause of China's sorrows. Whatever benefits China is now obtaining from modern inventions have been forced upon her. Nothing has been employed voluntarily. She has profited by trade and by commerce, by railways, by telegraphs, by scores of modern inventions. All were adopted as a result of pressure; and even yet she fails to see the wisdom of acquiring to any extent the benefits which latter day economic and industrial developments are able to confer. A proper recognition of the tremendous advantages which would accrue to the nation politically, financially and economically by the systematic application of modern methods of administration and the adoption of the scientific achievements of the world would, even at this late date, act as a magician's wand upon her feeble national life, and save her from the dire fate which seems to be overshadowing her.

China has never lacked earnest and loyal friends among the foreigners who have come to her shores; friends who have taken her questions to heart with a sincerity equal to that which they might feel with regard to the land of their nativity, and who have untiringly but vainly planned means calculated to free her from her gyves and permit her to emerge triumphant from the chaos into which she has been flung by the folly of her old and benighted officials. With a consistency which is astounding, however, she even now spurns the wisest of counsel, and has exhibited the utmost ingratitude towards the majority of those who have chivalrously plunged into the vortex of her difficulties in an attempt to assist in the restoration of her freedom and her "face." This is one of the most appalling of her extraordinary characteristics. Foreigners imbued with the most splendid of

motives and equipped with the alertest of brains have between them devised multitudes of measures for the emancipation of the country, and rarely have any met with any other fate than that of being ruthlessly cast into the murky deeps of the slough of despond. Their time, their trouble, and the best of their brains have been wilfully wasted, and down the steep declivity of national suicide China has wantonly rushed, without a saving grace; a subject of scorn even to her own people, and the very personification of ingratitude to those who could and would have assisted her to a better and more enduring state. What one of her present advisers, Mr. W. W. Rockhill, wrote of the Chinese in 1894, in his "Journey Through Mongolia and Tibet," page 17, would seem to hold good to-day: "Gratitude is, I believe, an unknown virtue among most Chinese, and the other Christian virtues have small room in their compositions."

And because the Chinese have flung so much to the winds in the past, it is difficult to believe that they possess the statesmanship to-day which will enable them to surmount their increasing difficulties. They strain agonisingly at the gnat of Japanese entrance into Shantung and swallow comfortably the camel of appalling degeneration throughout the whole of their great country. Astute statesmanship is called for now more than ever in the history of China. The convulsions raging in the world have so far merely touched the fringe of Chinese complacency and conceit, but unless those officials upon whose shoulders lies the great weight of responsibility for the safeguarding of the inheritance of the people are up and doing, and wisely and speedily up and doing, they may live to see their unhappy country plunged into the melting pot unable to give even a feeble shiver of resistance as their national entity is being extracted from China's anæmic frame.

Events are marching too rapidly in the world to-day for the soi-disant statesmen of China calmly to ignore them as in the past, and if the presence of the Japanese forces in Shantung will drive them to retrospection and a realisation of the means which even yet might be adopted to save them from annihilation as a nation it will have served a useful, a noble purpose. The royal road to safety lies over the horizon to foreign assistance in administration and industrial and economic development, and not around that circumscribed area wherein as of old ignoble adulation and self-conceit, garbed in silken robes, posed and strutted as competency and masterfulness. To save herself China must now do of her own volition what the nations have been urging her to do for centuries. She must open up; she must reform her administration; develop her mines, her industries and her commerce; mend her finances; transform her quagmires of highways into roads; systematize her railways; and above all, in fact, and not on paper, discard known wasters in her service and employ proved honesty and tried merit. In short she must clean up her house from cellar to attic, and to do it she must genuinely adopt of her own volition the skilled foreign assistance that is available for the asking. If she does not, the writing on the wall indicates that she will in no great span of time be compelled to sacrifice her right to do so. The world is undergoing too much readjustment just now for China to escape, and what she might now refuse to do will in course of time be done for her. To avert domination by Japan or any other foreign power, or coterie of foreign powers, China must quickly take steps properly to dominate in her own affairs—and the means to do that are at her hand if her officials have the statecraft, the courage and the foresight to seize them.

CHINA'S NEW PARLIAMENT

It would seem that China has not yet finished experimenting with Parliaments, despite the belief that exists in quarters that President Yuan Shih-kai has a deep aversion to the popular will being manifested in any way so far as the creation of legislation is concerned. During the past year, it must be admitted, the country has been controlled by dictatorial methods, but to describe the President as being hostile to a properly constituted and efficient Parliament does not, we believe, correctly state the case. The difficulty of ensuring efficiency is what causes the President to hesitate in agreeing to bestow a wide franchise upon the adult male population of China, or in creating a parliamentary organisation wherein the young men might contrive to obtain control and in their zeal work unwittingly to the detriment of the State. The Parliament created on the Constitution devised by the Young Chinese after the Revolution undoubtedly proved unworkable. Conditions in China did not warrant such a forward step, and it failed by being decades ahead of its time. The party government principle which the foreign educated Chinese saw in operation in certain other portions of the world was too advanced an exotic to impose upon the undeveloped political stock of China, and it was only natural that the conservatism of the officials revolted against it. Whether the constitution could have been made workable had not certain political issues developed, it is now idle to discuss. President Yuan Shih-kai deemed that it could not, and having the strength to act, and the conviction that the safety of China depended upon him, he struck vigorously, and wiped the Parliament and the provisional constitution of the revolutionists out of existence. In their places another provisional constitutional compact and another system of parliamentary representation have been devised. There is to be no chance left this time for the youthful hotheads to take flights beyond their sphere. The Li Fa Yuan is to be rather a stepping stone to parliamentary honors, than a full-fledged personification of popular power. It will contain no youthful and inexperienced aspirants to parliamentary fame. The franchise is a restricted one, and the powers of the Chamber will also be limited; and while it is on these grounds that the opponents of the President will base their charges of dictatorial control of legislation, still it has to be confessed that while the President wields his power wisely China is likely to gain and the gradual entry of her people into the rights of wider political freedom will be more beneficial both to themselves and the country.

The law promulgated for the Li Fa Yuan provides that there shall be 275 members with a term of membership of four years, and there will be but one session each year, commencing on September 1 and ending on December 31, unless the President exercises the power granted him to extend the session not more than two months, or call a special session. The President, too, is provided with checks which give him practically complete control over legislation.

Elections will be conducted by Electoral Colleges, the single system being used for the Special Central District and for Mongolia, Tibet, and Chinghai, while for the provinces the double system will be utilized, qualified electors electing the Electoral College which will subsequently elect the members of the Li Fa Yuan. The special Central Electoral College will elect forty members; 202 members will be elected by the electoral colleges of the various provinces, ten each by the provinces of Chihli, Fengtien, Shantung, Honan, Kiangsu, Kiangsi, Chêkiang, Hupeh, Szechuan and Kuangtung, nine each by the provinces of Kirin, Shansi, Anhui, Fukien, Hunan and Shensi, and eight each by Heilungkiang, Kansu, Sinkiang, Kuangsi, Yunnan and Kueichow; nine members will be elected by special administrative districts, four by Chingchao (Metropolitan District) two by Jehol, one by Shuiyuan, one by Chahar, and one by the Szechuan frontier; twenty-four members will be elected by the electoral colleges of Mongolia (16), Tibet (6) and Chinghai (2).

The qualifications of electors vary. In the central electoral college, as in all others, they must be at least thirty years of age, must be residents of Peking when the investigation of qualification takes place, must either have rendered meritorious services to the Government, or have been a high official, or be a learned scholar, or be a graduate of a high technical or higher school either in China or abroad, or possess equal qualifications of such a graduate, or have been a teacher in a high technical or higher school, or possess immovable property of the value of $10,000, or possess investments in commercial or industrial concerns to the extent of $10,000, or be a prince, or possess some hereditary title or rank of the Eight Banners, or, being a resident abroad, possess a capital of $30,000 in commercial or industrial concerns abroad.

To be an elector of the electoral college of a province or special administrative district a man must be at least thirty years

of age and must have resided for one or more years in the electoral district before the investigation of the qualifications of electors take place, and must have been either a high official, or a graduate of a middle or higher school or possess similar education, or have immovable property valued at $5,000, or have capital invested in commerce or industry to the value of $5,000. With regard to the people of the Eight Banners within the Metropolitan District an elector must be a graduate of a high elementary school or possess similar education, or possess immovable property to the value of $5,000.

The elector of the electoral colleges of Mongolia, Tibet or Chinghai must also be at least thirty years of age and be a prince or man of hereditary title or rank, or otherwise be considered competent, the restrictions provided for in other cases being removed.

To become eligible for election to the Li Fa Yuan a man must have the following qualifications. If he is an elector of any of the primary electoral colleges he must possess at least two years' experience as an official, be a graduate of a high technical or higher school, or still be studying, and possess immovable property to the value of $10,000, or possess a capital of $10,000. Besides the special provisions made for the primary elections any male citizen of the Republic who is thirty years of age may be elected a member of the Li Fa Yuan if he has either rendered meritorious service to the nation, or has been a high official for five years or more, or is a learned scholar, or is a graduate of a high technical or higher school either in China or abroad, or has been three or more years a teacher in a high technical or higher school, or possesses immovable property valued at $30,000, or possesses a capital of $30,000 invested in commercial or industrial concerns. In Mongolia, Tibet, and Chinghai any prince or person with hereditary title or rank, or any competent person may be elected.

The ineligibles for membership are those who are deprived of public rights, are of unsound mind, are illiterate, or bankrupt, are under process of law, or criminals.

The right to be elected or to elect is to be suspended in the case of the active Secretary of State and the various Ministers of the Cabinet, the active Chairman of the Tsan-cheng-yuan (State Council), the active chief and councillors of the Ping-cheng-yuan, the chief and censors of the Censorate, chief auditor and assistant auditors of the Bureau of Audit, and the chief of the Bureau of Mongolian and Tibetan Affairs, the active chief administrative officials of the provinces and special administrative districts, the active judicial officers, military and naval men, either active or on the reserve, police officers in active service, monks, priests or other religious functionaries, except the latter be in Mongolia, Tibet or Chinghai. Teachers of elementary schools and students shall not be entitled to vote.

The electoral rolls will be prepared by a special committee and another special committee will undertake the investigation of the qualifications of candidates for election, while the date of the elections will be announced by the President.

In order to give evidence of sincerity in the establishment of a "parliament" a Bureau has been created to make the necessary preparations for the elections. The Bureau is now active, and it is stated that the elections will most probably be held in the spring, while the inauguration of the Li Fa Yuan will be held at Peking on September 1, 1915. It is idle to speculate as to the future of this new body. The President believes in it —and the Young Chinese do not. That is the regrettable feature. Already we hear from various parts of China the murmurings of unrest, and there is evidence that rebel agents are busying themselves in an endeavor to cause a third revolution. What they hope to gain by such a movement it is difficult to understand. They certainly can work no good to the country by the utilisation of arms at this unhappy juncture in the world's history. China is in a difficult enough position as it is If she is convulsed by the turmoil of revolution her situation as an independent world power will be jeopardised to the extreme, and the leaders of the Young China party will be well-advised if they bend all their energies at this moment towards the consolidation of those things which China now endeavors to hold as her own. A revolution will do more to ruin the country, and deprive it of its independence than anything else that could be thought of. The foreign powers are in no frame of mind now to regard with equanimity the disturbance of peace in this quarter, and it is quite on the cards that a revolution will compel them to call the country to order by force if necessary and at least make arrangements for its control by a foreign commission. Revolutionists who pride themselves upon being "patriotic" should think of these possibilities.

GERMAN INFLUENCE ON OFFICIAL CHINA

While other nations have been scheming to extend their influence and advance their special interests in China through the medium of concessions, loans, education and the appointment of Advisers and teachers, the Germans in addition to adopting similar tactics, have pursued a distinct and successful policy of arriving at the same end through the cultivation of personal and friendly relations with the high Chinese officials. The policy of some nations would seem to incline towards demanding and securing for their nationals the positions of Advisers to the Chinese Government in its various departments. As a consequence the Chinese Government is compelled to pay the salaries of Advisers who place the interests of their own country above that of China, and who cannot give disinterested and sympathetic advice on questions which arise. The Chinese are, however, very well informed as to the value of such services, and the high officials who direct the affairs of the country rarely solicit or act on the counsel of special pleaders, preferring to seek the sympathetic and disinterested guidance of those foreigners who have won their personal confidence and esteem.

The conservatism of the foreign social clubs established in the treaty ports throughout China, prohibiting the use of the club for a high class Chinese official or gentleman, renders ordinary social and friendly intercourse very difficult. To advance business and expand trade, a sympathetic understanding must exist between the foreigner and the native merchant of any country. Trade will continue to flourish, even though this essential is ignored, but the greatest success must necessarily come to those who cultivate the friendship of the customer on a footing of social equality. The opportunities for social intercourse which make for better understanding and friendship are therefore very limited in China. The friendly disposed Chinese merchant or official is invariably compelled to limit his intercourse with the foreigner either through the medium of a formal business call, or the occasional tedious dinner function.

The Germans early adopted the method of ingratiating themselves with the Chinese and securing their friendship and confidence, by social intercourse based on a recognition of equality of social standing. In some individual instances, this was doubtless carried to the extreme, and assumed the form of rank servility, but on the whole, their advances met with ready and grateful response by the high Chinese officials. So while the other nations intrigued, hammered on the table, and sought to attain their ends through devious ways, the Germans quietly made personal friends of the high officials themselves and were thus able to exert a strong influence on affairs without recourse to diplomacy or threats.

Under the Manchu régime they pampered the princes and princelets and wet-nursed them from childhood to the age of discretion and office holding. They loaned them funds on their personal property, and catered to their other wants. They got on the inside of their private affairs and were able to act as confidential advisers in personal matters. The advice of the personal friend in such a case would generally outweigh all the arguments of the paid adviser. The Germans were richly repaid for their years of patient work. Nearly all the contracts for the large public buildings in Peking were awarded to German contractors. The Princes of the Blood were all pro-German. Prince Tsai-tao and his brother Tsai-Hsun, heads of the Army and Navy respectively were openly in favor of German methods in their respective departments. The private residence of Prince Tsai-Hsun in Peking is a fine specimen of German architecture. The high Chinese officials under the Manchu regime were only too glad to follow the lead of their Imperial masters and contract friendly relations with the Germans. The army officers were German to the core. General Yin-Chang, the Manchu Minister

of War, was a personal friend of the Kaiser and favored the adoption of German military methods. In fact the entire coterie of high Chinese military officials who upheld the Manchu dynasty, and many of whom are now the power behind the President were pro-German in thought and sentiment. When the revolution broke and the Manchu princes and the high Chinese dignitaries fled for safety from Peking to the treaty ports, is it any wonder that the majority selected the friendly shelter of the German colony of Tsingtau as the safest place of refuge? Here they were amongst friends who had in the past treated them as equals.

The regulations of the Kiaochou Government provide that no Chinese shall be allowed to reside within the European quarters of Tsingtau. But since Sheng Hsuan-huai, the last Manchu Minister of Communications, was permitted to live in the Settlement, many Chinese political refugees went to dwell in the city. The German authorities extended them every facility without stopping to question whether they were friendly to the Government or against Yuan. In short, Tsingtau was thrown open as an asylum for Chinese refugees regardless of their factional differences, and ample protection given them. The following is a list of prominent Chinese residing in the German Leased Territory at the commencement of this year.

Prince Kung
Hsu Shih-chang
Hsu Shih-kwang (brother of Hsu Shih-chang and the former Customs Taotai of Chefoo)
Li Ching-hsi (the Chairman of the Political Council)
Li Ching-mei (the heir of Li Hung-chang)
Yang Tu (Superintendent of the Hankow Rebuilding Committee)
Chen Kuei-lung (the ex-Viceroy of Liang-Kwang Provinces)
Chow Hsieh-hsi (the son of Chow Fu and the ex-Minister of Finance)
Chow Hsieh-yuan (another son of Chow Fu)
Chao Erh-hsun (the ex-Viceroy of Fengtien)
Chang Jen-chun (the ex-Viceroy of Liang-Kiang Provinces)
Lu Hai-huan (the Chairman of the Chinese Red Cross Society)
Lu Jun-hsiang (the Tutor of the ex-Emperor)
Chu Ting-lin (a member of the Political Assembly)
Yu Shih-wei (the ex-Vice-President of the Li Pu)
Li Chia-chu (the ex-Vice-Chairman of the Tzu Cheng Yuan)
Wu Yu-sheng (the ex-Grand Councillor)
Yu Tse-ta (the ex-Governor of Shantung)
Hu Chien-shu (the ex-Governor of Shantung)
Sun Chia-lai (the ex-President of the Wai Wu Pu)
Wang Chiao-sheng (the ex-Vice-President of the Li Pu)
Wu Chien-sun (the Civil Administrator of Shensi)
Chu Chung-chi (the ex-Financial Commissioner of Fengtien)
Hsiao Chi-chun (the ex-Industrial Taotai of Fengtien)
Wan Shu (the ex-Commissioner of Salt)
Tung Tzu (the Industrial Commissioner of Shantung)
Hung Shu-tzu (the alleged assassinator of Sun Chiao-jen)
Lin Chin-tsao (the ez-Vice-Superintendent of the Chekiang Railway)
Chang Chu-pao (the ex-Vice-Superintendent of the Shanghai Arsenal)
Sheng-Yun ex-Viceroy of Shen Kan (under the fictitious name of Lo Tu-su)
Sun Pao-chi (ex-Minister to Germany, Governor of Shantung and Minister of Foreign Affairs)
Hsi-Liang (ex-Viceroy of Manchuria.)
Wu Chih-mei
Yuan Tai-hua
Hsu Ting-lin and others of less distinction.

The present Minister of Finance is Mr. Chow Tsz-chi, promoted to the Cabinet from the Governorship of Shantung; the Minister of Communications, Mr. Liang Tun-yen, resided five years in Berlin immediately previous to his assuming office, in fact he came direct from Berlin to take up his post; the Minister of Foreign Affairs, Mr. Sun Pao-chi, during the last five years has been continually under German influence as Minister to Germany, Director General of the Tientsin-Pukow Railway and Governor of Shantung, and his son-in-law, Mr. W. W. Yen is the present Minister to Germany. Mr. Hsu Shih-chang, Secretary of State and intimate of the President, Mr. Li Ching-hsi Chairman of the Political Council and others high in the affairs of China at this time were recalled to office after an extended residence in the German colony of Tsingtau. The President himself was Governor of Shantung before he was promoted to the Viceroyalty of Chihli, and experienced contact with the Germans when they first entered the Province. It is clear from these facts that the German policy of making personal friends of the rulers of China is more effective and advantageous to the advancement of their interests than the methods of other nations.

Is it any wonder then that when the great war broke loose in Europe, the high officials of the Chinese Government openly sympathized with the nation whose representatives in China had won their personal friendship? The "root of German influence" may be "eradicated from China" but the Germans have pointed a way to attain success in this country that other nations may well profit by. This road is open to all; the broad way of friendly and social intercourse on a plane of equality. The elimination of social and racial distinctions and a friendly interchange of opinion has paved the way for the Germans to find the heart of the Chinese and exert real influence without the necessity of diplomatic pressure.

Wherever the white man rules in Asia, he makes it an unchangeable law that the color and racial line be tightly drawn in his social and club life. In other parts of Asia under European rule the need of a club where the educated gentlemen of both races can meet and exchange opinions on equal grounds has long been advocated. In Calcutta, where the British refrained from mixing socially with the people they governed and conducted business with, the need of such a club was advocated several years ago, and in Manila, the FAR EASTERN REVIEW, advocated the same idea, which was taken up by Governor General Forbes and resulted in the organization of a club in which the leading Filipino and American officials could meet on common ground and learn to know each other. In China, the same necessity exists, but it is a striking commentary on the policy of all other nations, that the only clubs of this nature, were created by the Germans and the French in Peking Housed in the building of the Shui-wu Chu is the Sino-German Club where the leading officials of the country can meet in friendly intercourse the German merchants and officials who desire that they should know each other better, while the Sino-French Club is in the Legation quarter. In this the Germans and the French have set the other nations an example they may well profit by.

EDITORIAL ANNOUNCEMENT

The present issue of the FAR EASTERN REVIEW, supplies in a readily accessible form, a first instalment of all the information available about the Province of Shantung. When it is remembered that the Province, as the birth-place of Confucius, has a semi-sacred character; that it is densely populated and immensely rich in minerals and the staples of numerous great industries, it is surprising that hitherto no attempt has been made to present to the world in collected form the information that has been scattered through reports by the Maritime Customs Commissioners, consuls, by mining experts, by missionaries and others. It was found when the task was begun that there was such a mass of information to be dealt with that it was impossible to condense it within even an enlarged edition of the REVIEW, consequently the record will be continued in the December number.

In addition to original articles on the neutrality problems raised by recent happenings in the province and the laboration of a policy by which China may preserve her sovereign rights, other articles giving the most recent information in regard to the Shantung Railway and the mines will be found. All these articles are fully illustrated and elucidated by maps.

As many of our subscribers have expressed a wish to have the information contained in this and the next special issue in book form, arrangements to this end have been made and an announcement in connection therewith will be found on the colored page preceding the reading matter.

THE SHANTUNG RAILWAY

The original capital of the Company was 54,000,000 Marks, but when the Company took over the rights and property of the Shantung Mining Company on January 1, 1913, the capital was increased to 60,000,000 Marks, divided into 60,000 shares of 100 Marks each.

The grading for the road-bed began on September 23, 1899, at Tsingtau and Kiaochou, when His Royal Highness Prince Henry of Prussia turned the first sod. The engineers planned a single track, standard gauge line, and work was carried on in both directions, east and west, some 25,000 laborers being employed. Progress was fairly rapid, the grading of the road-bed presenting few engineering difficulties. For the greater part of its length the line runs through flat country, skirting the foot of the mountains in middle Shantung, and dynamite was only employed in a few places in the German leased territory and in a few cuttings on the western section.

Starting from Tsingtau station, which is eight metres above the sea, the railway crosses several low chains of hills between the larger rivers, and on reaching the water-shed of the Yun-ho, attains a height of eighty-eight metres, gradually ascending as far as the city of Tsing Chow-fu. Wide streams such as the Pai Cha-ho, Schykia-ho, and Taku-ho, are crossed before Kiaochou, at the head of the bay, 74 kilometres from Tsingtau, is reached, and thence to Changling, 128 kilometres from Tsingtau, the line passes through a fertile plain crossing the two rivers, Mischui-ho and Kiau-ho. West of Changling the line reaches the hilly country and passes the ranges in long winding curves to Wei-hsien, 183 kilometres from Tsingtau. Many rivers rise in this part of the country, two of them being spanned by bridges of nearly 300 metres in length each.

Having reached Tsing Chow-fu the line descends to a height of 40 metres near Chow-tsun, and about 20 kilometres west of that city a chain of mountains running from south to north is crossed, the height reached at Wang-tsun being 158.73 metres above sea level. From this point the line gradually descends to Tsinanfu, where the altitude is but 34.80 metres above sea level.

Branch Lines.—A branch line, 40 kilometres in length, beginning at Changtien, which is 47.17 metres above sea level, runs in a southerly direction up the Poshan valley, following the course of the Hsiau-fu-ho. The town of Tzechwan, the centre of the coal mines of the Company, is passed en route and the terminal station is at Poshan, 179.40 metres above the sea.

A branch line seven kilometres in length from Setchwan also connects with the Hungchan coal mines; another branch four kilometres in length joins the main line at Fangtze with the coal mines, while another branch at Tsinanfu, eight kilometres in length, gives connection with the Yellow River. In a short time a new branch seven kilometres long will be open to the iron mines at Chinlin-chen, where work has just been begun.

Length of Line and Gradients.—The total length of the main line is 400 kilometres, or 395,373.75 metres, of which there is a level grade of 41.62% or 164,452.68 metres. The ascending grade from east to west is 29.01%, the descending grade being 29.37%. The straight track totals 299,323.42 metres, or 75.71%, the curves absorbing 24.29%.

The Poshan branch line has a length of 39,200 metres, the level grade being 30.42%, and the ascending grade 69.58%. The straight track totals 27,416.04 metres, or 69.94%, the curves totalling 30.06%.

The steepest grade on the main line is one in 150, and on the Poshan line one in 100. The sharpest curve has a radius of 300 metres.

Road-bed.—The road bed is five metres wide, the slope being one in 1.5. In flat country, where floods occur, the slope is one in 2. Excavations are likewise five metres at the bottom. Ditches wide enough to carry the water which runs from the sides of excavations have been made and lined with cement plaster.

Earthwork.—As far as possible excavations of any considerable depth were avoided owing to the great friability of the soil. No tunnels were necessary.

Embankments are protected against the ravages of heavy rains and floods by heavy stone reinforcements of the base, in addition to which the sides have been protected with sod, and trees such as willows, acacias and alders.

Ballast.—The stone ballast is 4.50 metres wide, and consists either of broken stones (granite or black limestone) or of pebbles, and is at least 35 centimetres thick.

Bridges and Culverts.—The total number of bridges and culverts along the line is 1,330. Of these 1,150 are iron bridges, and 280 arch stone culverts. The latter vary in length, the maximum being six metres. The total length of all such culverts on the line is 640 metres.

The spans of the iron bridges vary from one metre to 46 metres, and their total length is 7,700 metres. The longest bridge is over the Tse-ho, 258 kilometres from Tsingtao, the length being 470 metres. The number and dimensions of the bridges more than 50 metres long are as follows:—50 metres to 100 metres, seventeen; 100 metres to 200 metres, three; 200 metres to 300 metres, five; 470 metres, one.

Masonry.—The total mason work on bridges and culverts amounts to 210,000 cubic metres. The foundations of most of the large bridges are laid upon iron piles 12 to 14 metres long. In a few cases the foundations rest upon caissons.

Rails and Ties.—The normal length of the iron rails is 10 metres, and the weight 300 kg. each. The ties are of steel, weighing 50 kg. each. The material was all bought in Germany. The rails are ten centimetres wide at their base, 5.7 centimetres at their top, and are 12.50 centimetres high. The ties are 2.40 metres long and 8 centimetres high.

Stations.—There are 55 stations for all kinds of traffic on the main line, and four on the branch line to Poshan. Besides these there are five stations at the end of short branches for receiving cargo only.

The majority of the stations have goods sheds. Some important stations have two, the total number of all sizes being 32. European station masters are in charge at Tsingtau, Kaumi, Fangtze, Changtien, and Tsinanfu West.

Round Houses.—There are 16 round houses, with capacities varying from 4 to 12 locomotives. The round houses at Tsingtau, Kaumi, Fangtze, Changtien, and Tsinanfu are under European control.

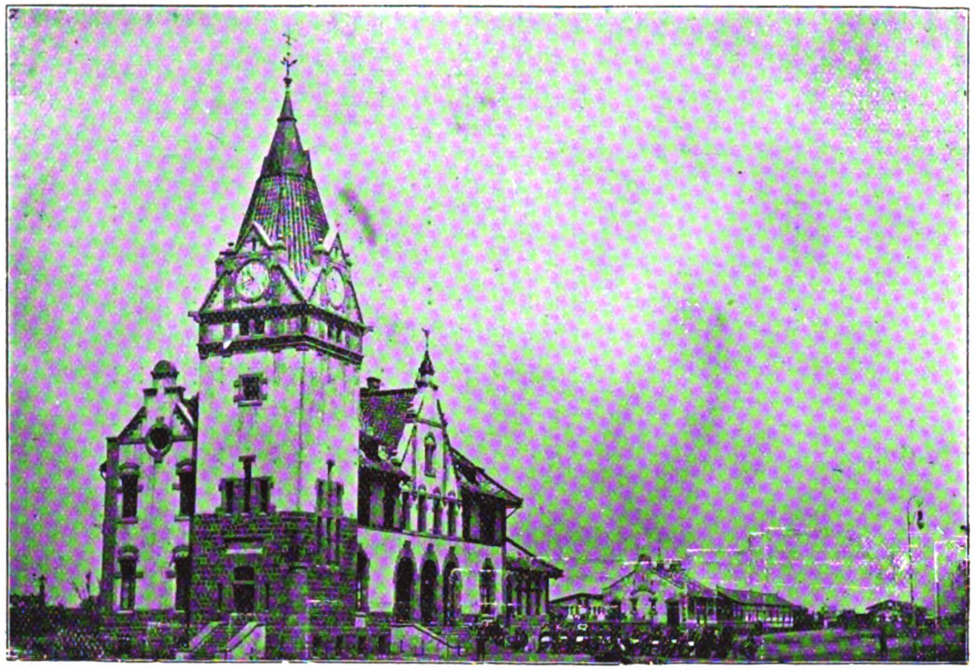
Turn-tables.—There are eight turn-tables with an inside diameter of 17.50 metres each.

Tank Houses.—There are 20 tank houses with water tanks of from 40 to 80 cubic metres each.

Platform Scales.—There are twelve platform scales of 55 tons capacity each.

Works Shops.—Large work shops and magazines are situated at Syfang, near Tsingtau, and are fitted with the best and most modern machines, operated by electricity. They are capable of effecting all necessary repairs, and most of the outfitting work can be quickly and efficiently done. The shops are under the direction of an engineer of the Imperial German Railways, who has under his control 16 Europeans and about 700 Chinese apprentices. The stations which are under the supervision of Europeans are able to effect small repairs to locomotives and cars. They engage in this work about 100 apprentices and laborers.

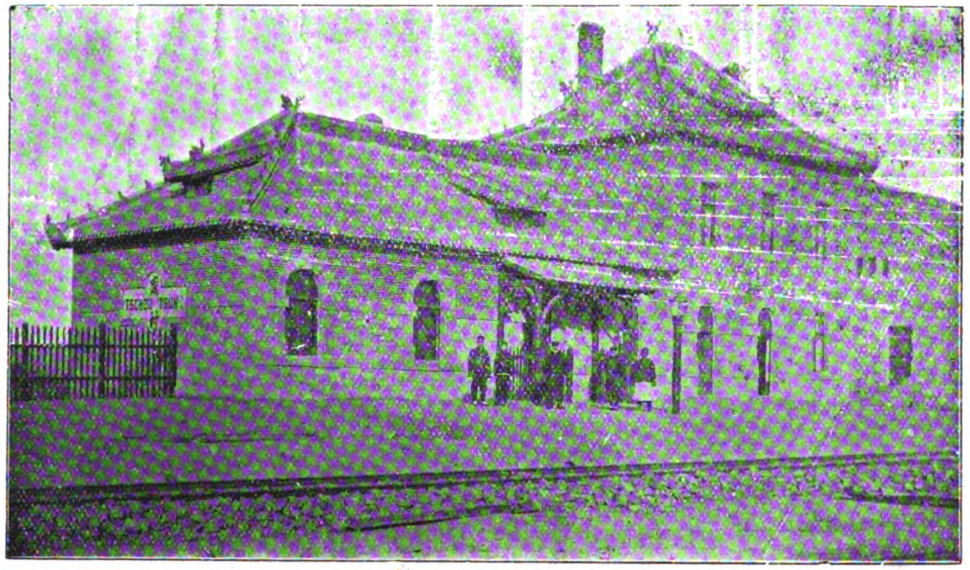
Opening of the Line.—The first section of 74 kilometres to Kiaochou was opened for traffic on April 8, 1901, and further sections were put into operation during the same year. On June 1, 1902, the whole of the first half of the line, as far as Weihsien, was opened for freight and passenger traffic, and on June 1, 1904, the whole line, including the Poshan branch, was opened.



Terminal at Tsingtau.

Ching-chow Fu Station.

Tscheng-yang Station.



Tschou-tsun Station.

Likotschuang Station.

SHANTUNG RAILWAY—Types of Stations.

Cost of Construction.—The railway was five years in construction and the entire cost of construction and equipment was 52,901,266 Marks.

Following are the details:—

Land	£ 89,700
Earthwork	148,000
Level crossing and fencings	2,700
Bridges and culverts	728,000
Permanent way	759,000
Signals, blockhouses, etc.	13,200
Stations	106,000
Repairing-shops, etc.	85,000
Materials (coals, etc.)	310,000
Administrative expenses	203,000
Interest on capital, etc.	200,000
Total	£2,644,600

or, including interest on capital, about £9,200 per mile.

The longitudinal section of the road shows that the main line is made up of forty-two per cent. level, twenty-nine per cent. rise, and twenty-nine per cent. fall, with a maximum grade of six per cent. The permanent way has been constructed to sustain ordinary traffic at a speed not exceeding 37.5 miles per hour.

The survey covered in area a strip of land varying in breadth between 500 and 2,000 yards, and cost about £36 per mile, being completed at the rate of ten miles per month. The land was expropriated in accordance with Chinese law, *1s. 1d.* being paid per square yard, with a surcharge of eight per cent. for land in crop and near the townships. The earthwork was sublet in contracts of six miles in length, and was paid for at schedule prices, *1s. 4d.* per cubic yard for ordinary earthwork, and *10d.* per cubic yard for rock. All bridges and culverts were standardized, as well as the wooden and steel scaffoldings used for erection.

Report for 1912

The following is the report of the Board of Directors of the Shantung Railway Company for 1912:—

The year 1912 closed with a profit of $3,063,909.13 (2,410,583.65)* and a dividend of 7½ (6%) for the capital and M. 12.50 (M. 5.00) for each special share. The receipts amounted to $4,239,664.01 (3,511,105.60) and the expenditure to $1,175,754.88 ($1,100,521.95). In spite of the decrease in the shipments of construction material for the Tientsin-Pukow Railway both the passenger and the freight traffic show a remarkable increase. The high rate of the Chinese dollar—mean rate for the year M. 210.47, (185.99)—benefited the financial result of the company to a great extent.

There were no remarkable accidents, neither were any bridges or culverts destroyed during the rainy season.

The increase in traffic and the connection with the Tientsin-Pukow Railway necessitated the following improvements and building:

At Hamatun and at Ershilipu one small freight-shed; in Tsinanfu West the enlargement of the station in order to facilitate the passenger and freight traffic from and to the Tientsin-Pukow Railway; in Tsingtau a dwelling house for Chinese station and train personnel, and a car shed for the new 1st Class dining cars; a depôt at Tsingtau Grosser Hafen; at Syfang enlargement of the shops (not finished), a shed for the main storehouse, and an office building for the administration of supplies with dwelling house for the personnel; a lumber-shed for the central repair, etc., shops at Kaumi; a lodging-house for training personnel in Fangtze and Weihsien; a lodging house for train-personnel in Fangtze; a dwelling house for Chinese personnel at Tchangtien and Tsinanfu West.

The condition of the tree plantations and shrubberies is satisfactory. Mostly acacia and willow were planted. The tree-nurseries of the Railway furnished the young trees.

The agreement with the Tientsin-Pukow Railway with regard to transfer of cars, which proved satisfactory, was in December, 1912, after the completion of the Hoangho-bridge, extended to all stations of the Tientsin-Pukow Railway. During the year 1912 the following cars were transferred:

From the Shantung Railway to the Tientsin-Pukow Railway, 3,959 (5,026) cars.

From the Tientsin-Pukow Railway to the Shantung Railway, 1,895 (492) cars.

The decrease of cars from the Shantung Railway to the Tientsin-Pukow Railway is due to the fact that the construction work of the Tientsin-Pukow Railway is nearing its completion and the shipment of supplies is decreasing accordingly.

Rolling Stock:—

Locomotives: 41 (41) viz:

23 ten wheeled, 6 coupled, 2 cyl. simple passenger engines.
4 ten wheeled, 4 coupled tank passenger engines.
7 eight wheeled, 6 coupled tank-freight-train-engines.
3 eight wheeled, 8 coupled, 2 cyl. simple freight-train-engines.
4 eight wheeled, 6 coupled shunting engines.
Total of 0.094 engine per kilometer of road.

Passenger and Baggage cars: 110 (110) viz:

15 Passenger cars, 1st and 2nd Class
5 „ 2nd „
8 „ 2nd and 3rd „
3 Dining cars
3 Kitchen cars
23 Baggage cars
10 „ and mail cars.
1 Office car
1 Saloon car
Total of 1.253 cars per kilometer of road.

Freight and service cars: 1,051 (1,013):

283 Covered wagons
557 Coal (open) wagons
75 Coke-wagons
5 2-story cattle wagons
10 Wagons for transp. of lime with lid
104 Flat wagons
3 Trav.-cranes
2 Tool wagons
1 Trav.-scales
Total of 2.419 cars per kilometer of road.

On the average there were 41 locomotives and 1,121.75 cars on hand during the year.

One express passenger train travelled daily between Tsingtau and Tsinanfu, also 16 mixed trains and about 9 supply, etc., trains.

The total number of trains amounted to 12,530 (10,644) and the total number of kilometers travelled to 1,439,760 (1,322,805).

The number of kilometers travelled is distributed as follows:

	No. of trains.	Kilometer.
Passenger	732 (688)	288,408 (269,490)
Special Passenger Trains	20 (9)	2,758 (1,646)
Mixed Trains	5,856 (5,836)	653,680 (646,516)
Trains carrying R. R. supplies	3,204 (2,049)	465,506 (377,408)
Construction Trains	2,718 (2,062)	29,408 (27,745)

The rolling stock obtained the following results:

(a). Locomotives: 1,623,144 (1,432,374) Locomotive Kilometers distributed as follow:

	Loc. Kil.
in Passenger trains:	288,408 (269,490) „
„ Special P. „	2,758 (1,646) „
„ Mixed „	653,680 (646,516) „
„ Supply „	465,506 (377,408) „
„ Construction „	29,408 (27,745) „
„ Extra trains	153,019 (83,506) „
Empty	30,365 (26,063) „

in addition to the above
in Switching 42,606 (35,794) hours at 10 L. Km=426,060 (357,940)
in Miscellaneous 20,370 (19,534) hours at 5 L. Km.=101,850 (97,670)

(b). Wagons: 61,807,064 (50,486,864) Wagon-Axle-kilometers, i.e.,

	Axle-Kilo.
Passenger cars	13,552,466 (10,315,180) „
Baggage & Mail cars	3,446,100 (3,206,848) „
Freight cars	44,808,498 (36,964,836) „
Empty	15,433,076 (12,683,180) „

Average strength of train:
42.93 (38.17) axles.
Average of traffic per week:
23,655 (17,482) Passengers 16,385 (14,084) Freight tons
Greatest traffic in one week:
35,469 (25,283) Passengers 32,267 (24,277) tons of freight
Total of traffic
1,230,043 (909,065) Passengers 852,001 (717,189) tons of freight.

Receipts: Total $4,239,664.01 (3,511,105.60) distributed as follows:—
Passenger traffic: $970,246.52=22.89% (714,204.55=20.34%)
Freight traffic: $3,229,969.37=76.18% (2,741,807.86=78.09%)
Miscellaneous $39,448.12=0.93% (55,093.19=1.57%)
Average receipts per km. $9,758.92 (8,081.91)

Compared with the preceding year the receipts increased 20.75% (—5.88%) as follows:—
Passenger traffic+35.85% (+9.04)
Freight traffic+17.80% (—7.63)
Miscellaneous—28.40% (—48.51)

Expenditure: Total $1,175,754.88 (1,100,521.95)
=per kilometer $2,706.37 (2,533.20)
compared with preceding year+6.84% (+10.08)

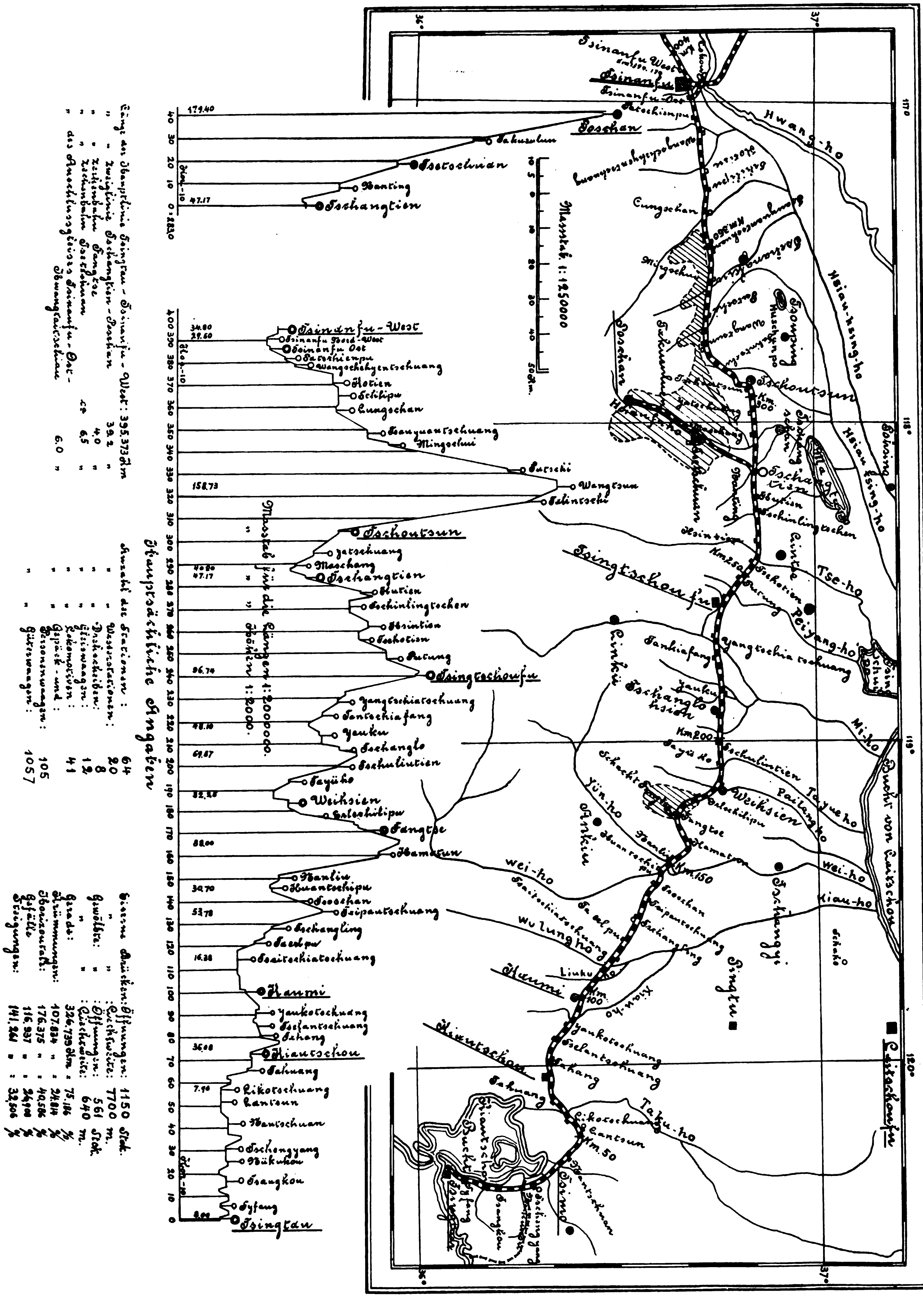
The proportion of the receipts to the expenditure 100:27.73 (31.34)

The following items concerning the balance have to be considered:—

Supplies on hand:

Main Storehouse	M. 884,393.36
Telegraph „	36,411.72
Coal & Oil „	79,635.48
Printing „	18,291.79
Fixtures, etc.,	9,500.91
Total	M. 1,028,233.26

* The figures in parenthesis are the corresponding figures for the preceding year.



MAP OF THE SHANTUNG RAILWAY

Stocks and Bonds on hand: M. 520,000.00—3½% Bayerische Eisenbahnanleihe (Bavarian R. R. Loan) M. 300,000.00 3½% Deutsche Reichsanleihe (German Loan) remained unchanged. On account of the low rate of exchange of the above bonds a loss of M. 26,540.00 during 1912 occurred. All the above stocks and bonds were sold during the current year 1913.

Outstanding Funds: Advances made to Shantung Mining Co. M. 1,000,000.00.

Repair and Improvement Fund stands with M. 3,397,289.11 against M. 499,583.95 of the preceding year. The additions were:—

For use of track and material	M. 405,000.00
Interest	115,908.21
Sale of old material	1,037.50
	521,945.71
The deductions were: Expenditure for track and supplies	22,361.76
	499,583.95

To a newly formed "Disposition and Valuta" Fund M. 800,000 were transmitted.

PROFIT AND LOSS

Including M. 304,791.48, balance brought forward from 1911, and after deduction of:

M. 405,000.00—Addition to Repair and Improvement Fund
M. 800,000.00—"Disposition and Valuta" Fund
M. 26,540.00—Loss by rate of exchange.
The *net receipts* for 1912 amount to M. 5,596,296.61.
It was proposed to distribute the profit as follows:

To the Reserve Fund	M. 264,575.25
„ „ Special Reserve Fund	264,575.25
5% Dividend = M. 50 per share	2,700,000.00
Compensation of Board of Directors	103,117.73
Taxes to the Government	116,235.46
Extra dividend of 2½ = M. 25 per share	1,350,000.00
To special shares M. 12.50 per share	675,000.00
Balance to be carried forward	122,792.92
	M. 5,596,296.61

The traffic in the last few months of the new year has been satisfactory, and it is believed that the decreased receipts due to the double Chinese New Year will be made good. It was suggested by persons interested in both the Railway and Mining operations, to acquire the entire Mining Company to become part of the Company. As the existence and extension of the Mining Company is of vital interest to the Railway as being a source of considerable shipments over the line, a resolution was adopted at a General Meeting of the Company on February 12, 1913, to take over the entire Shantung Mining Co. against a compensation of M. 5,400,000.00, to be covered by an issue of new shares equally entitled to dividends from January 1, 1913, excluding privileged rights of shareholders as to sale of products. The registration of the resolutions in the Register of Commerce at Tsingtau took place on April 4, 1913, after the consent of the Imperial Chancellor as to the transfer of the Shantung Mining Co. to the Shantung Railway Co. had been obtained. The Shantung Mining Co. (to be dissolved) announced in accordance with Par. 50, Civil Law, the dissolving of the Shantung Mining Co. as such and asked its creditors by circular to send in their claims.

According to reports on hand the net receipts of the Shantung Mining Co. from April 1 to December 31, 1912, amounted to M. 660,000.00 and for the first quarter of the current year to M. 240,000.00. According to these figures and the expectations of the General Meeting, the results to be obtained from the Shantung Mining Co. will equal those of the Shantung Railway Co. and yield about an even distribution of dividends.

Character of Traffic

LIST OF GOODS SHIPPED

	1912	1911	1906	1905
Coal and Coke	471,808	418,536	207,876	158,115
Piece Goods	57,477	47,505	8,952	25,353
Metal, Machinery	13,625	42,962	8,912	9,873
Beans	48,777	35,575	36,572	38,409
Coal oil	34,516	31,626	10,331	2,936
Wood and Woodware	20,167	20,412	15,153	14,515
Oil	17,182	20,973	5,005	4,127
Cotton, raw and fabrics	4,458	9,721	25,648	9,899
Paper	8,545	7,961	7,134	1,685
Earthenware	8,740	7,796	5,209	3,847
Straw matting, etc.	10,385	6,166	3,897	3,993
Vegetables	45,911	30,635	2,340	2,193
Lime	5,866	2,868	3,358	3,285
Sugar	7,566	2,738	4,388	—
Grain	6,419	2,213	1,477	995
Matches	6,747	2,155	4,246	1,125
Tobacco	3,051	2,019	686	708
Cash	707	1,293	724	2,425
Rock of all kinds	2,906	1,104	1,942	2,026
Cement	668	1,051	1,965	3,607
Indigo	1,489	1,004	1,092	783
Kauliang	5,136	926	907	—
Glassware	549	852	—	630
Flowers, plants, etc.	1,263	721	—	—
Silk cocoons	963	631	605	354
Silk	990	503	162	101
Oilseed Cake	1,504	435	—	3,727
Mill products	45	240	451	740
Rice	15	160	3,053	3,712
Salt	4,598	60	—	—
Brooms	4,029	33	1,757	1,029

Shantung Railway Company Balance Sheet

BALANCE ON DECEMBER 31, 1912.

			Mark	Pf.
Construction Account	M	56,029,324.15		
Addition	„	1,192,664.—	58,031,968	15
Trees	M	91,822.68		
Nurseries and plantations	„	13,503.27	105,325	95
Supplies			1,028,233	26
Goods billed en route			507,870	—
Stocks and Bonds			717,380	—
Cash in hand:				
In Berlin	M	1,034.83		
In Tsingtau	„	30,383.79	31,418	62
Debtors:				
In bank	M	3,879,274.46		
Outstanding	„	1,894,941.93	5,774,216	39
			66,196,412	47

	Mark	Pf.
Assets	54,000,000	—
Outstanding Coupon stock	14,650	—
Creditors	25,624	41
Repairs and Improvement funds	3,397,289	11
Reserve funds	1,181,276	12
Special Reserve funds	1,181,276	12
Disposition and Valuta funds	800,000	—
Profit and Loss accounts	5,596,296	61
	66,196,412	37

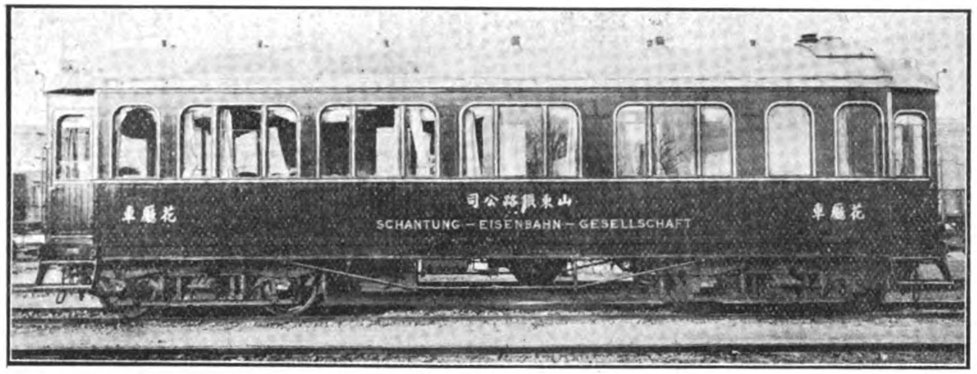
PROFIT AND LOSS ON DECEMBER 31, 1912

Debit

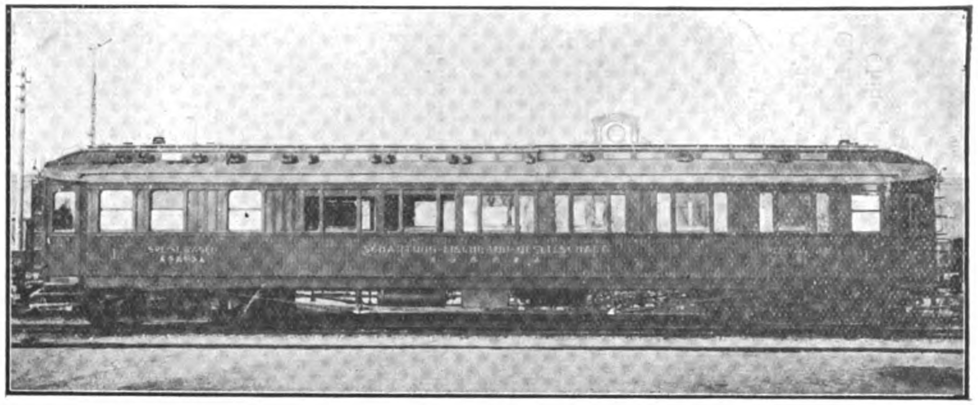
			Mark	Pf.
Expended in operation			2,464,629	99
Addition to Repair and Improvement funds			405,000	—
Disposition and Valuta funds			800,000	—
Loss by exchange			26,540	—
Net profit			5,596,296	61
Distribution:				
Reserve funds	M	264,575.25		
Special Reserve funds	„	264,575.25		
Dividend 5 per cent.	„	2,700,000.—		
Directors' fees	„	103,117.73		
Government Taxes:	„	116,235.46		
Extra dividend 2½%	„	1,350,000 —		
Special shares	„	675,000.—		
Carried forward	„	122,792.02		
	M	5,596,296.61	9,292,466	60

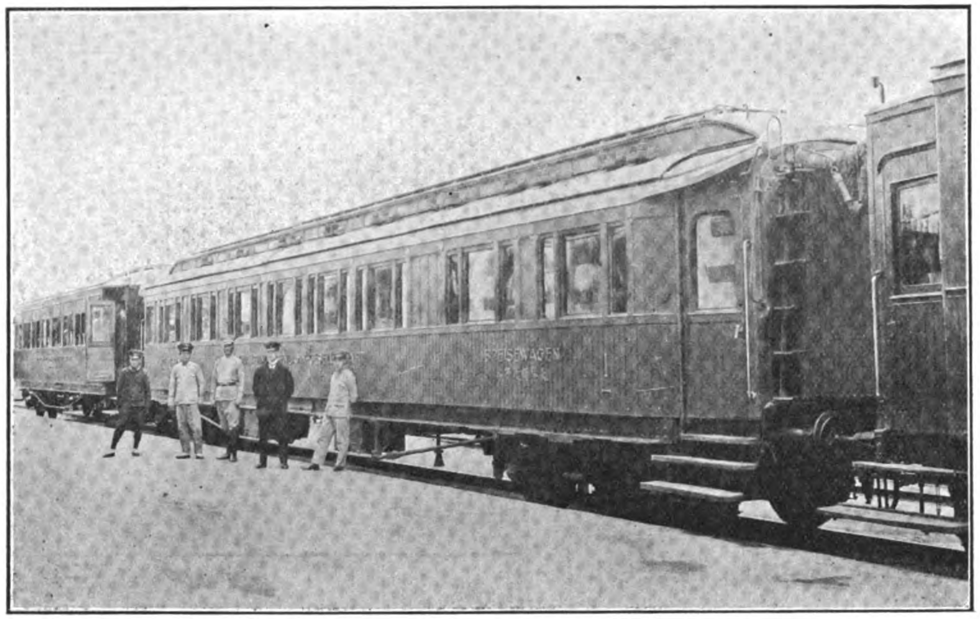
Credit.

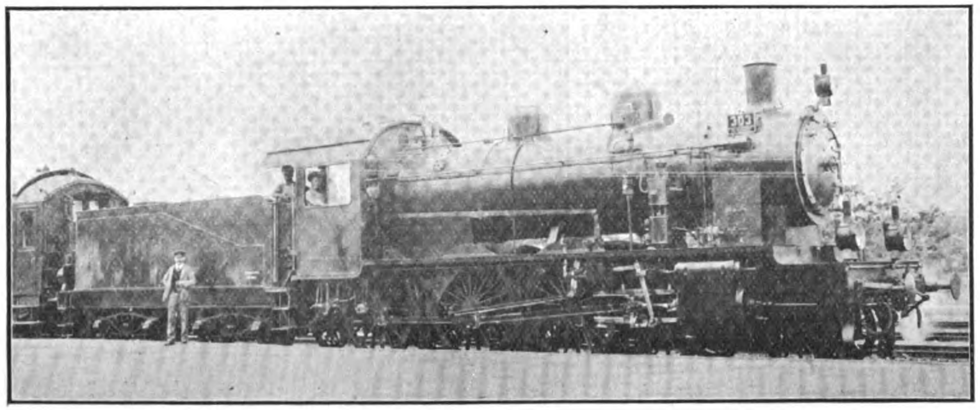
	Mark	Pf.
Brought forward for 1901	304,791	48
Gross receipts and Interest	8,987,675	12
	9,292,466	60

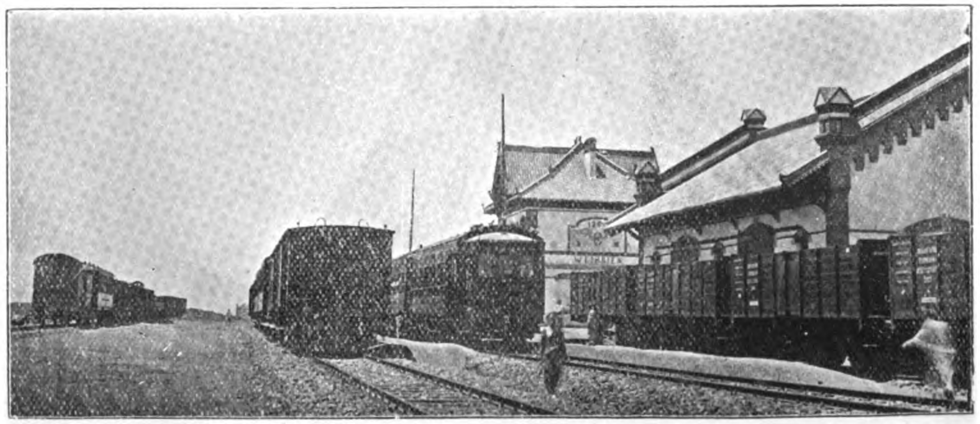


A Saloon Car.


Restaurant Car.


An Express Train.


An Express Locomotive.

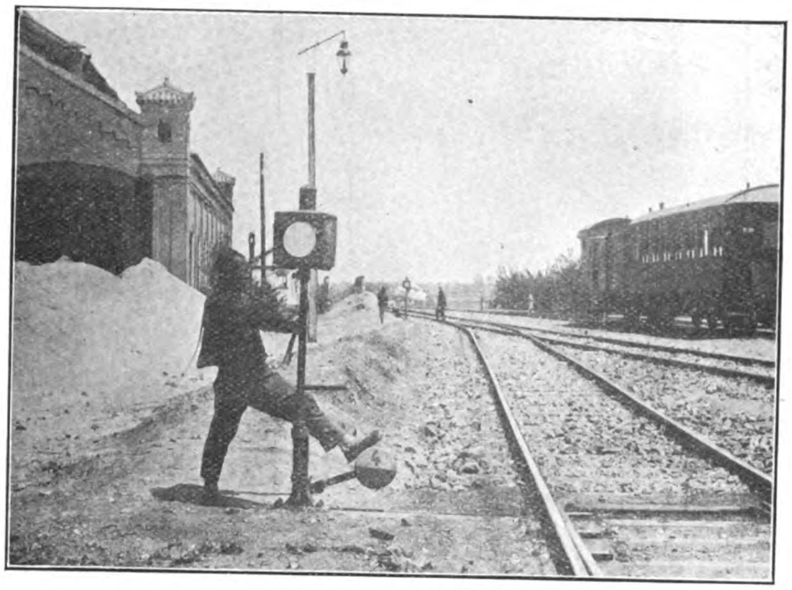

Weihsien Station.

SHANTUNG RAILWAY—CAR AND LOCOMOTIVE TYPES.

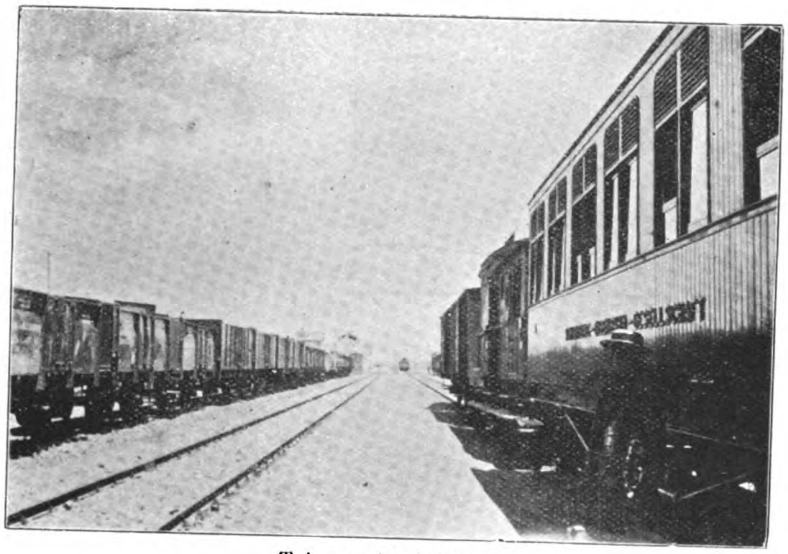
DISTRICTS SERVED BY THE RAILWAY.

There are 55 stations on the main line and four on the Poshan branch. The principal places served are as follows:—

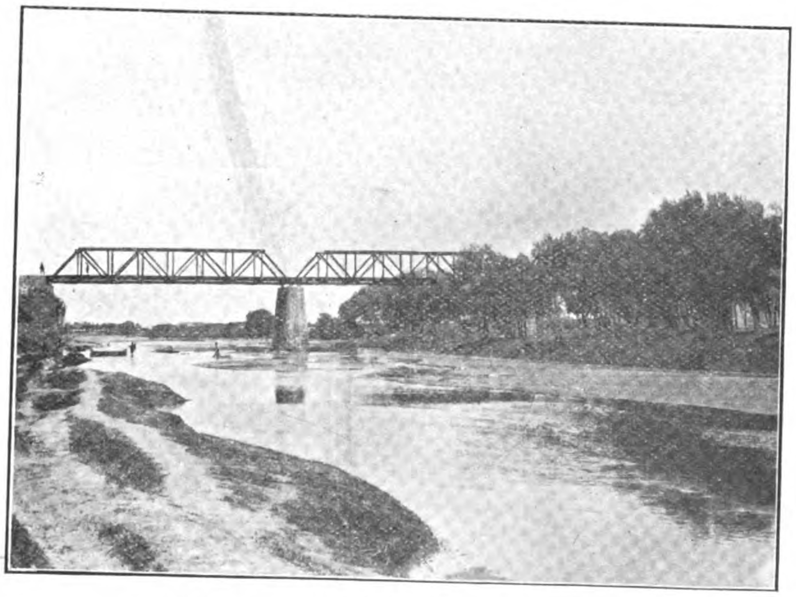
	Distance. Kiloms.	Remarks.
Tsingtau	...	Seaport, fortress and summer health resort. Permanent civil population, about 30,000.
Grosser Hafen	3	Station for Tsingtau harbour, &c.
Syfang	8	Railway repairing sheds, &c.
Tsangk'ou	18	Small ports on shore of Kiaochou Bay
Nükuk'ou	28	
Nanchuan	47	Point of access for Chimo, also for Pingfu Chou and surrounding straw braid producing district.
Kiaochou	81	Capital of sub-prefecture. Very large city. Was in occupation of German troops till the beginning of 1906. Point of access for straw braid districts. Point of junction with proposed South Shantung (Kiao-chou-Ichou Fu-Tsinan Fu) line, sanctioned in the Kiaochou convention with Germany of 1898, but not made.
Kaomi	107	District city, like Kiaochou, evacuated by the German troops in 1906.
Fangtze	183	A flourishing town with a European population of about 100, and a Chinese population of several thousand, has grown up here in connection with the coal mines of the Schantung Bergbau Gesellschaft. It is the chief coal mining centre in Shantung. The first shaft sunk (252 metres) is about a mile south of the railway, with which it is connected by a short branch. A second shaft (about 350 metres) has been completed this year, close to the railway on the north.
Weihsien	196	A large city, probably 100,000 inhabitants. Centre of many manufactures, silk, embroidery, &c. Point of access for silk centre of Chang-i Hsien. A prospectus has been published of a proposed railway hence to Chefoo (226 kiloms.) via Chang-i Hsien, Laichou Fu, Huang Hsien, and possibly Têngchou Fu. The 17th regiment of the Luchün army has been stationed here for over a year. A "Branch Commercial Settlement," under the direction of the Tsinan Fu Commercial Settlement Bureau, was laid out here, and declared open to foreign trade and residence in 1906, but has not been developed. The town has long been a centre of missionary activity:—Union College (Presbyterian and Baptist), with extensive premises to the east of the city.
Ch'ingchou Fu	255	Capital of department. Formerly a large city, now much decayed. A Manchu garrison formerly occupied a separate walled city to the north. Centre of missionary activity, with Theological College, &c.
Tsê-ho Tien	270	Railway bridge over Tsê ho. Place wholly of historical interest. Lin-tzu Hsien, 10 miles to the north, is the ancient capital of the kingdom of Ch'i, some twenty of the kings being buried in tumuli close to the railway line.
Chiu-ling Chên	290	Hill to the north of the line containing iron ore (64 per cent.)
Ch'ang-tien	302	Junction with branch line to Poshan
On branch line—		
Chih-ch'uan (Tsechuan)	32	Large district city. Important coal mining centre. Schantung Bergbau Gesellschaft has a mine at Hung-shan, connected by short branch with Chih-chuan station.



A Pointsman at Work.

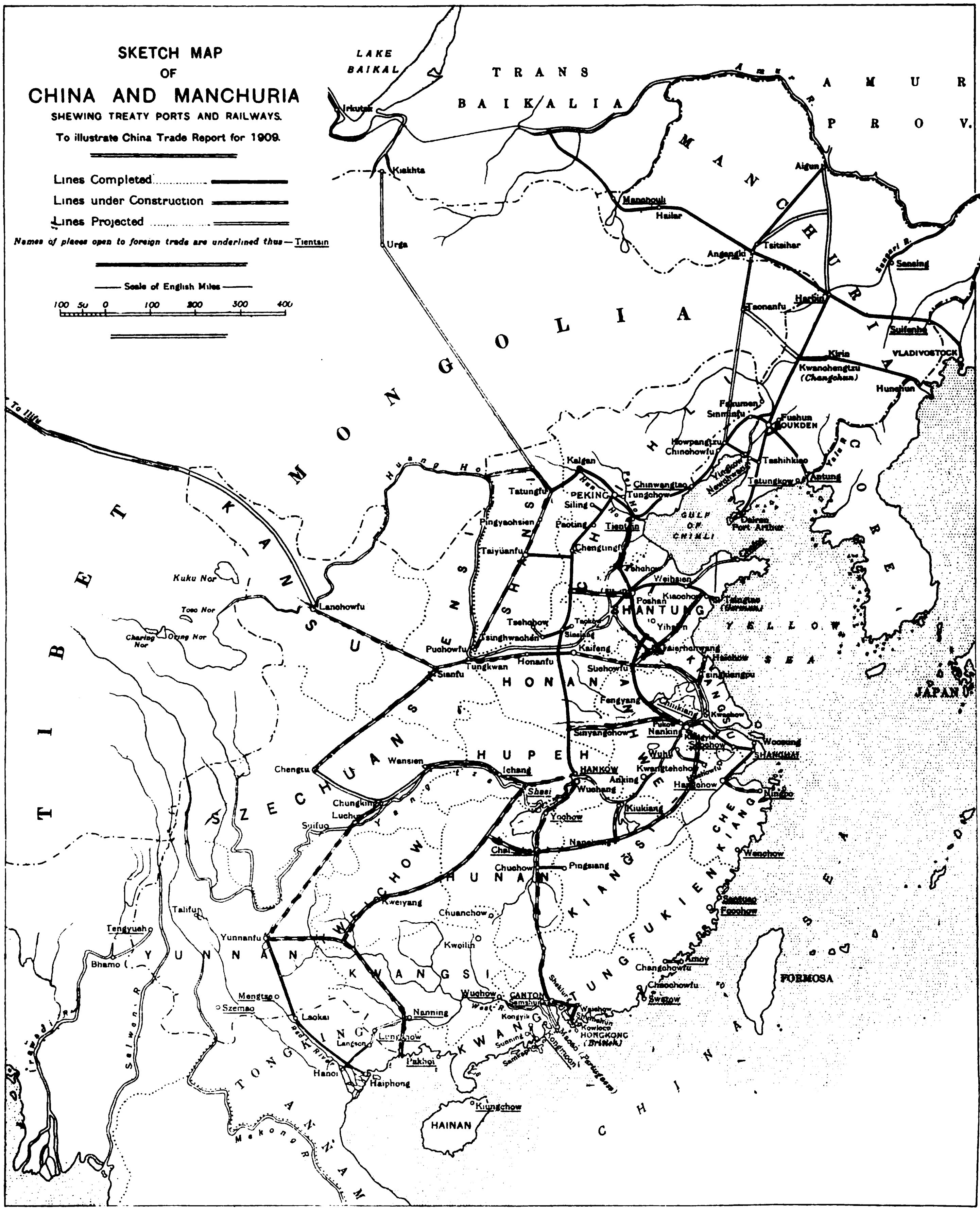


Tsingtau Train Yard.

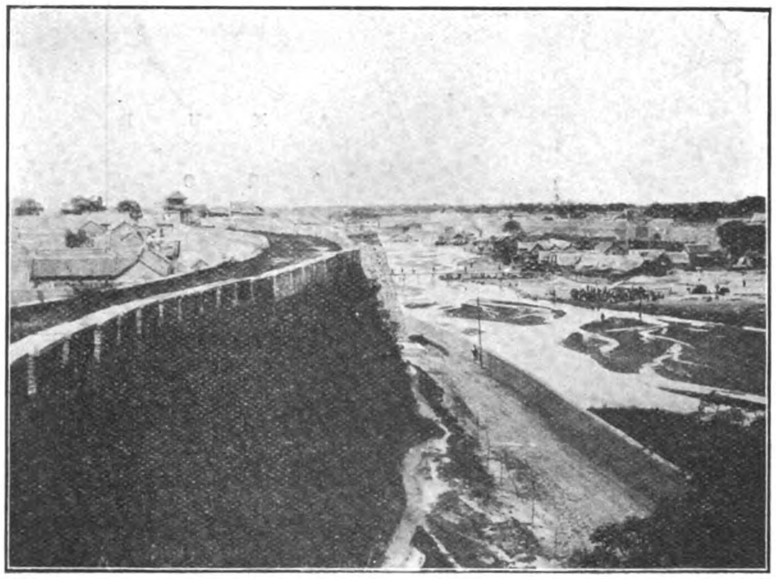


A Bridge over the Pailang-ho near Weihsien.

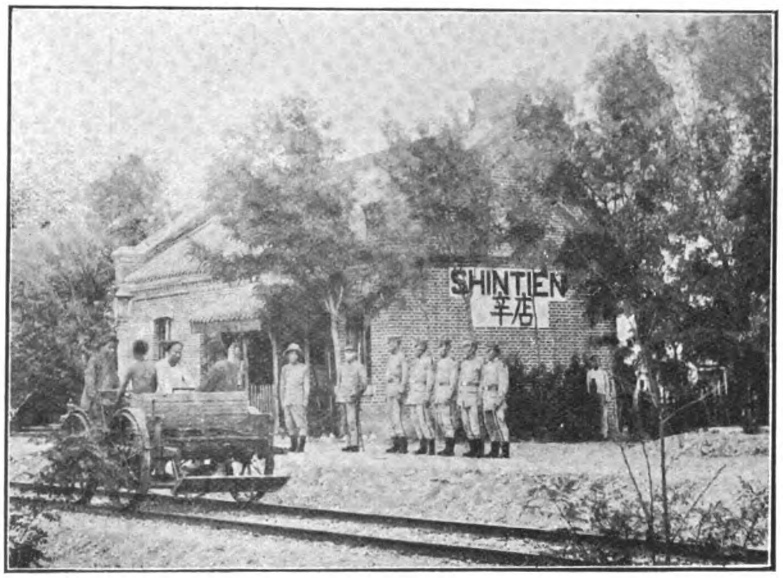
SHANTUNG RAILWAY VIEWS.



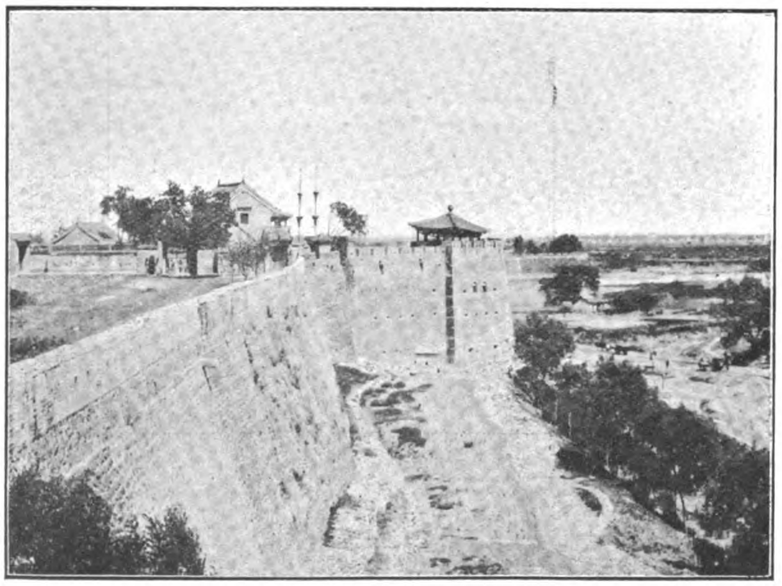
RAILWAY MAP OF CHINA, showing relation of the Shantung lines to the general system.



The Pailang River at Weihsien.



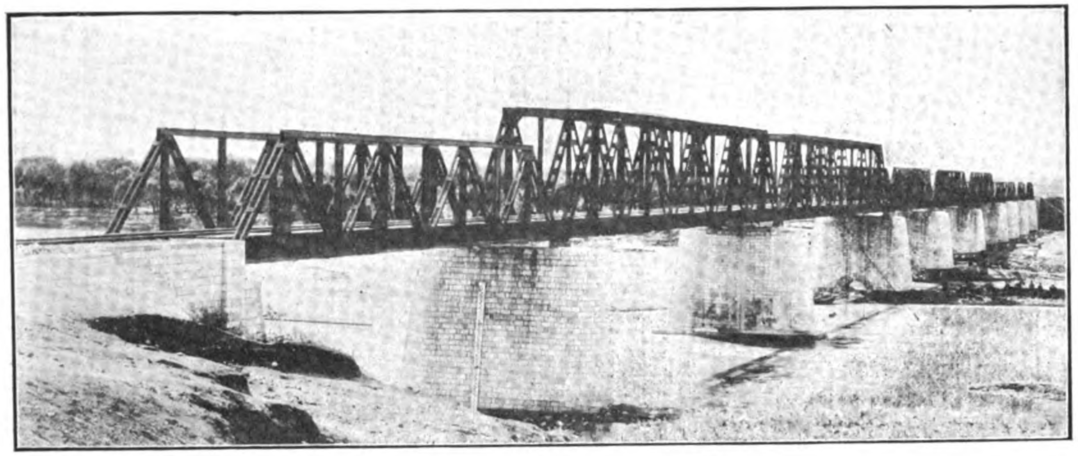
Guard at Shintien Station.



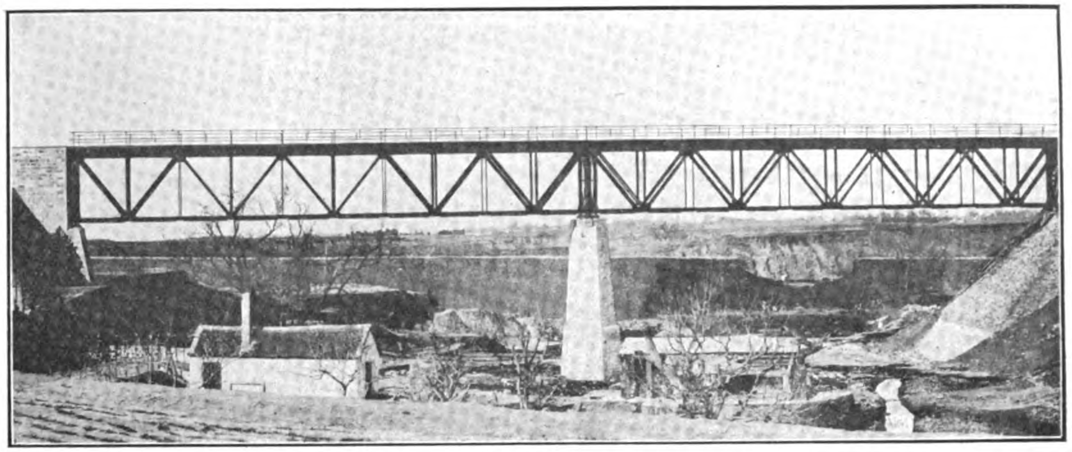
The Wall of the City of Weihsien.

SHANTUNG RAILWAY VIEWS.

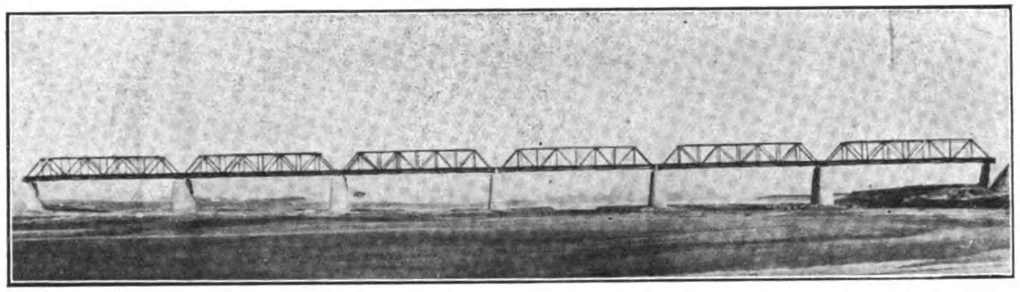
Poshan	43	Large district city in very populous valley. Many native coal pits, also most important centre of glass manufacture in China. Besides many purely native establishments, the large factory of the Poshan Glass Company, with all modern appliances, was opened in February, 1907.
Main line resumed—		
Chouts'un	320	Large town, equal to or larger than Wei-hsien. Principal centre of silk manufacture in Shantung. Point of access for Tsoup'ing Hsien (important missionary centre) to north, also for P'u-t'ai and other places on lower Huang-ho. Branch "Commercial Settlement" laid out and opened to foreign trade and residence, under direction of Tsinan Fu Commercial Settlement Bureau, in 1906, but, as at Wei-hsien, not developed.
Mingshui	361	Important centre of rice cultivation. From Chouts'un to Mingshui the railway threads an intricate valley between high hills on both sides.
Lungshan	378	Large market town. Coal mines a few miles to the south at a place called Puchuan.
Tsinanfu, East	406	Small branch line (2 miles) to bank of Hsiao-ch'ing Ho at Hung-t'ai Chiao, continued thence by light truck line to Lo-k'ou, another 4 miles. From Huang-t'ai Ch'iao steam launch traffic on the canal to Yang-chiao-kou, 146 miles, has been attempted, but water is generally insufficient. Junk traffic is considerable. From Yang-chiao-kou steamers run during a portion of the year to Chefoo, sometimes calling at Lung-k'ou, and junks ply to many places on the Shantung and Manchurian coasts.
Tsinanfu, North-west ...	409	Close to north wall of city. The station, being found the most convenient for passenger traffic for the greater part of Tsinanfu, has lately been enlarged.
Tsinanfu, West	412	Terminus. Adjoins the "Commercial Settlement" opened to foreign trade and residence in 1906. For various reasons the foreigners resident in Tsinanfu have only in a few instances taken lots and built in the Settlement, where, however, the new German Consulate and premises of the Deutsch-Asiatische Bank are conspicuous buildings. Oil installations of the Asiatic Petroleum Company and the Standard Oil Company are near the railway line. Seven German firms and several Japanese have premises or agencies in the city, but the only British concern (apart from the Asiatic Petroleum Company already mentioned) which has agents frequently at Tsinanfu is the British-American Tobacco Company, whose wares and travellers penetrate all parts of the province and appear to do a thriving business. Other foreigners at Tsinanfu are missionaries or teachers, &c., engaged by the Chinese authorities of the provincial capital in connection with the government hospital and the various colleges.



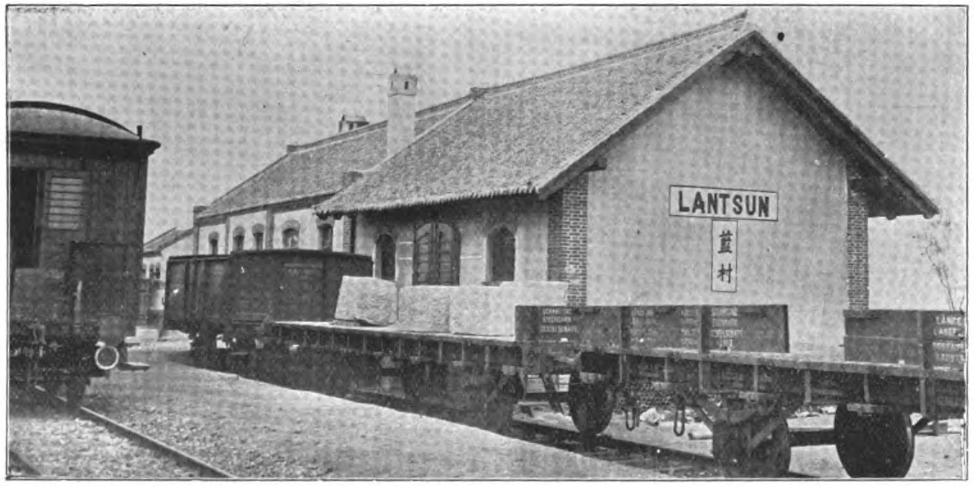
Bridge at Kilometre 144; length 272 metres.



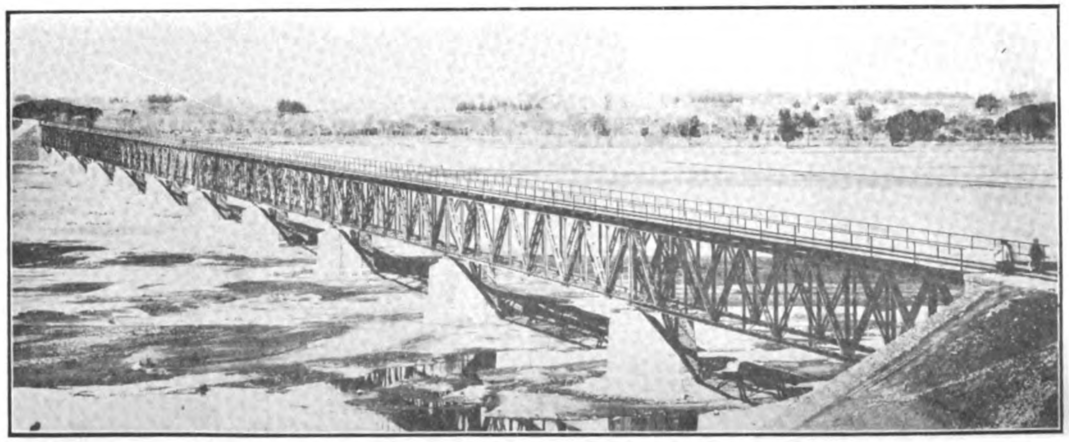
Bridge at Kilometre 316; length 80 metres.



The Taku-ho Bridge.



Lantsun Station.



Bridge at Kilometre 258; length 470 metres.

SHANTUNG RAILWAY—TYPES OF BRIDGES.

THE MINES OF SHANTUNG

COAL

Clause IV. of the Kiaochou Convention granted to Germany certain mining rights in Shantung in the following terms:—

> The Chinese Government will allow German subjects to hold and develop mining property for a distance of 30 *li* from each side of these railways and along the whole extent of the lines. The following places where mining operations may be carried on are particularly specified along the northern railway from Kiaochou to Tsinan, Weihsien, Po-shan-hsien, and various other points; and along the Southern Kiaochou-Tsinan-Chinchow line, Chinchowfu, Laiwu-hsien, etc:—
>
> Chinese capital may be invested in these operations and arrangements for carrying on the work shall hereafter be made by a joint conference of Chinese and German representatives.

It will be noted that the Convention specifically mentions four distinct mining locations, Weihsien, Poshan-hsien and various other points on the northern line, and Chinchow-fu and Liawu-hsien on the northern line.

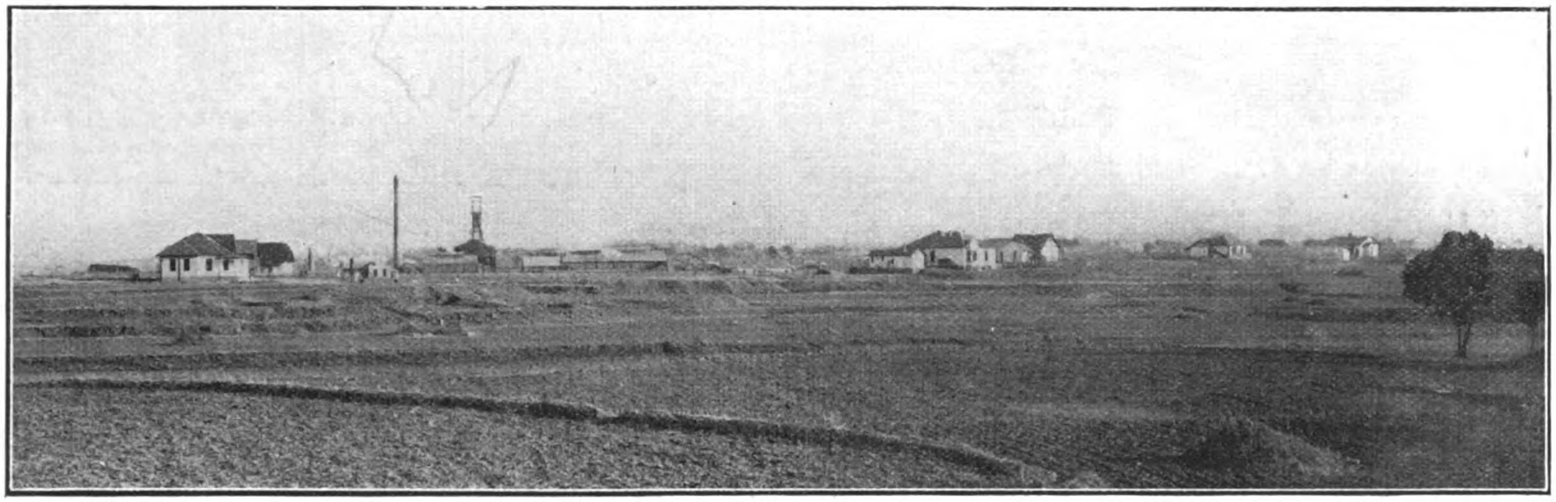
Under the terms of this concession a syndicate was formed in Berlin under the direction of the Disconto-Gesellschaft, and on the 10th of October, 1899, the Shantung Mining Company was registered in Berlin under the laws regulating Colonial Limited Liability Companies. The headquarters of the Company were located in Tsingtau, and operations were commenced with a capital 12,000,000 Marks. Mining Experts were sent out to investigate and report on all the known deposits comprised within the area of the Concession.

The concession on the northern line extends to an area of 30 *li* on either side of the railway and embraces the two valuable known coal-fields—Fangtze about 170 kilomètres (= 102 English miles) from Tsingtau, and the valley of Po-shan and Tzŭ-ch'uan about 290 kilomètres (= 168 English miles) from Tsingtau, adjoining which are the iron mines of the T'ien-shan near Chin-ling-chên.

Wei-hsien Coal Fields.—The coal fields of Wei-hsien are remarkable for the irregularity in the distribution of its coal seams; and the preliminary boring trials indicated that the whole of the surrounding country was at one time the scene of violent volcanic eruptions, which so disturbed the coal deposits that nearly a whole year was lost by the mining engineers in finding a continuous seam.

The theory advanced to account for the pockets of coal embedded in the granite which were discovered and exploited by the Chinese is that the action of water on the uneven surface of the subsidiary bed of granite caused deposits of coal-forming vegetable matter in the crevices, where they could not be washed away, leaving the upper surface of the granite bare. The remains of the Chinese shafts are distributed in small clusters where these pockets are found, and are separated from each by the outcropping granite. As the Chinese miner cannot go deeper than 180 feet, on account of his inability to cope with the increasing volume of water which has to be removed to permit of work being carried on, it is not known how deep these pockets are. Their lateral area is, however, so small that the Chinese have practically ceased to mine them; and as they were valueless as mines worked under modern principles, the engineers turned their attention to other places where coal had not been found on the surface. After boring for a year, during which only granite and volcanic tufa were found, they struck a seam of coal about 9 feet thick, at a depth of 450 feet, running from north-east to south-west. A shaft was sunk, and mining operations commenced. The Wei-hsien coal is bituminous containing about 30 per cent. of gas; it burns with a clear flame, and does not cake like the Japanese coal, and it has also the advantage of having a lighter smoke.

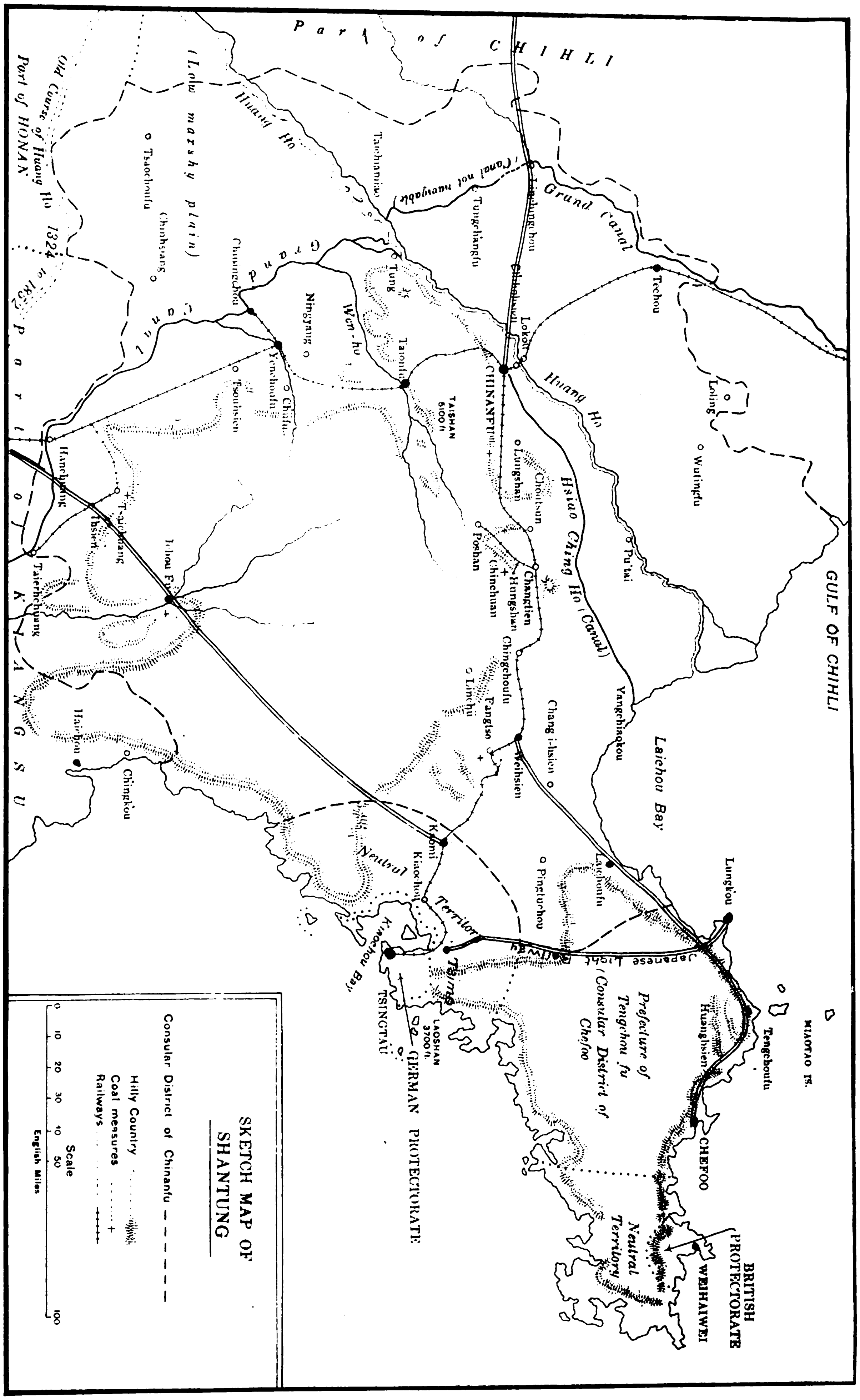
Po-shan Coal Field:—The valley of Po-shan, in which are situated the district towns of Po-shan and Tzŭ-ch'uan is about 20 miles long, and, from a couple of hundred yards at Po-shan, nearly 6 miles broad where it joins the North Shantung plain, near Chou-ts'un. The whole of this valley is a vast bed of coal, situated at a deeper level in the middle and appearing on the surface at the edges, where it has been forced upwards by the pressure against the limestone of the surrounding hills. At the north-west exit of the valley the coal bed is interrupted by a chain of limestone hills; but it commences again and continues in undiminished quantity in a westerly direction, for another 20 miles, between the main range on the south and the Chang-pai-shan on the north. In this valley and its branches are situated the mining centres of Pu-chi and Pu-chuan.

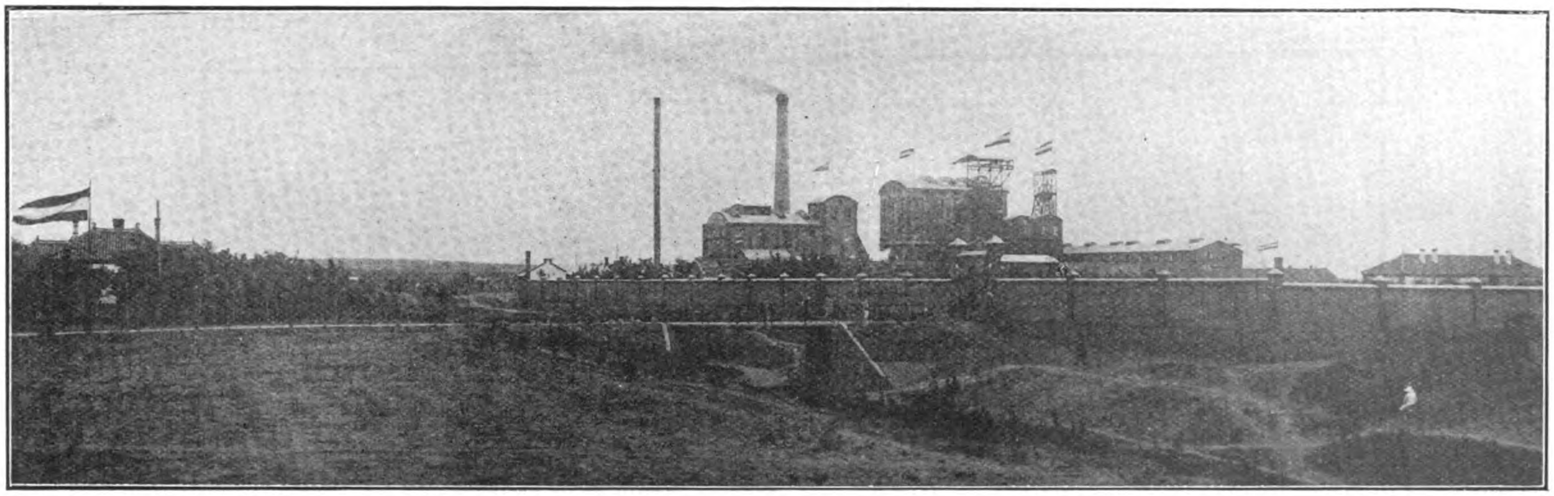


The Hungshan Coal Mines.

South of the narrow gorge at Po-shan another valley opens out, in which is situated the Hei-shan or Black Hill, in contrast to the Hung-shan or Red Hill, so called from its ruddy appearance, which lies to the north-east of Tzŭ-ch'uan, near the entrance of the valley.

The best quality of anthracite coal is found near the surface in the Hei-shan Valley, and it is on account of this coal that Po-shan has been famous. It is principally used in manufacturing coke, which, owing to its lightness, can be transported further by wheelbarrow than the heavier coal. Po-shan coke is used at Ch'ing-chou-fu, Chou-ts'un, and at Tsinanfu and was even sold at Kiaochou, a distance of 500 *li*. Unfortunately, the Chinese were unable to cope with the waters in the shafts, and most of the mines were obliged to suspend work. The


SKETCH MAP OF SHANTUNG
Consular District of Chinanfu
Hilly Country
Coal measures
Railways
Scale
English Miles
0 10 20 30 40 50 100
GULF OF CHIHLI
Part of CHIHLI
Part of HONAN
KIANGSU
Laichou Bay
Huang Ho
Grand Canal
Hsiao Ching Ho (Canal)
Old Course of Huang Ho 1324 to 1852
(Low marshy plain)
CHINANFU
Tsingtau
TSINGTAU
GERMAN PROTECTORATE
Kiaochou Bay
Neutral Territory
Japanese Light Railway
BRITISH PROTECTORATE
WEIHAIWEI
CHEFOO
Neutral Territory
Prefecture of Tengchou fu (Consular District of Chefoo
Tengchoufu
Lungkou
MIAOTAO IS.
TAISHAN 5100 ft.
LAOSHAN 3700 ft.
Techou
Weihsien
Yenchoufu
Taianfu
Tsaochoufu
Kiaochou
Wutingfu
Pu'tai
Yangchiaokou



Mines of the Shantung Mining Company.

method of removing the water is extremely primitive. A basket woven of willow twigs is passed from one man to another, and is then emptied into a ditch at the mouth of the coal pit. As the galleries are low and narrow—about 3 to 4 feet in diameter,—the miners are obliged to work in a sitting position, and during the time that water is being removed from the mine other work has to cease. The side galleries are short, and are shored up with millet stalks supported by short wooden props. In a country devoid of timber the cost of shoring up extensive galleries, and, in addition, the difficulty of removing the water, is so considerable that the miners are prevented from going far into a seam of coal. The cost of timber may also account for the small diameter of the galleries, which, if enlarged, would need extra support.

The coal, loaded on low, wooden trucks, with iron wheels manufactured at Chin-ling-chên from T'ieh-shan iron, is run along the galleries on wooden ways until the bottom of the main shaft is reached, and is then hoisted by wicker basket attached to a pulley on a framework built over the mouth of the pit, pulled by horses.

The Tzŭ-ch'uan coal mines, worked by Foreign machinery supplied by an English firm, were, closed in 1891. In 1898, the machinery having been partially repaired at the Tsinan Arsenal, it was put up by a Cantonese at the foot of the Hung-shan, at a place called Nan-p'u, and used instead of a pumping apparatus. The Native coal pits, being situated at a higher level, were thereby drained of the water which had put a stop to their working. Work was resumed with great vigour, and the Cantonese drew a royalty for keeping the mines dry. The Hung-shan surface coal is not as good in quality as that from the Hei-shan mines, and is not suitable for coke. The best quality lump costs from 5 to 6 large cash a catty at the mouth of the pit; 2nd quality, about 3 cash; and dust, from 1½ to 2 cash. The transport by wheelbarrow has been calculated at about 12 cents a ton per *li*, and this must necessarily limit the consumption of coal to a very small radius, notwithstanding its low initial cost. At Tsinanfu for instance, a ton costs $20.

The Shantung Mining Company, in the supposition that the superior Hei-shan coal which crops out at the head of the valley is the continuation of the main coal bed, centered their operations to strike it at a lower level, nearer the main railway line which crosses the entrance of the valley at Chang-tien, thus reducing the distance of the subsidiary line from the mine to the junction with the main line at Chang-tien.

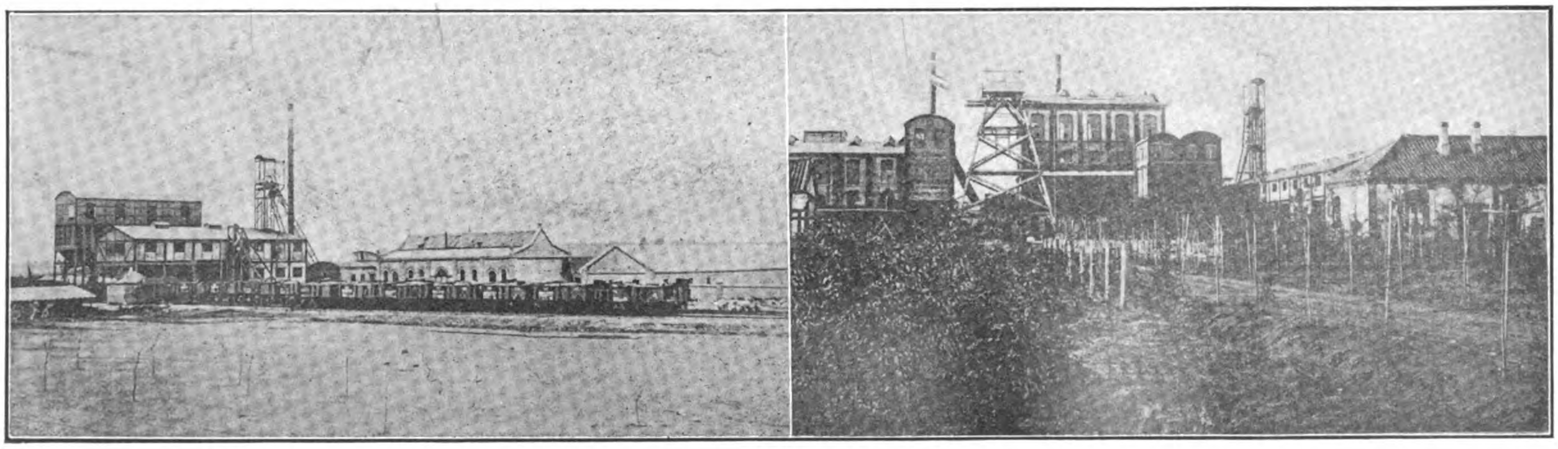
Eight miles to the north-east of Chang-tien are the important iron ore deposits of the T'ieh-shan, which furnish the ore for the Chinese iron-smelting works of Chin-ling-chên.

The German mining parties concentrated their efforts to locate Coal at Weihsien, Poshan, Putsan, Putschi, Tawenkou, Ihsien and Kuetschow and for iron ore at Chinlingchen. The combined results of all the geological researches proved much less than they had been led to expect from the exaggerated Chinese reports. Many stories and legends abounded about the presence of Gold, silver and lead and large diamond Mines near Yichowfu, which on examination proved to be greatly exaggerated.

The Germans therefore decided to develop the coal fields at once. Coal deposits were located in most of the inlets of the mountain chain bordering on Tsinanfu, Yhsien, Itschou, Kuetschou, Tsingtschoufu, later on, however, these were wholly or partly washed away, and through volcanic influence finally displaced and partly demolished.

It is, however, owing to these same volcanic disturbances that connection was established with the older numerous metallic veins in the mountains, which as already mentioned, are not worth mining, the one exception to these being the large magnetic iron deposit near Chinlingchen of extremely good quality, and in addition a similar deposit, but less valuable on account of the silics contained, in the neighbourhood of Yhsien.

On the completion of the general geological researches made, it was decided that following the progress in the building of the railway line, a further special investigation of the remaining mining grounds should be conducted.



Shafts of the Shantung Mining Company at Fangtse.

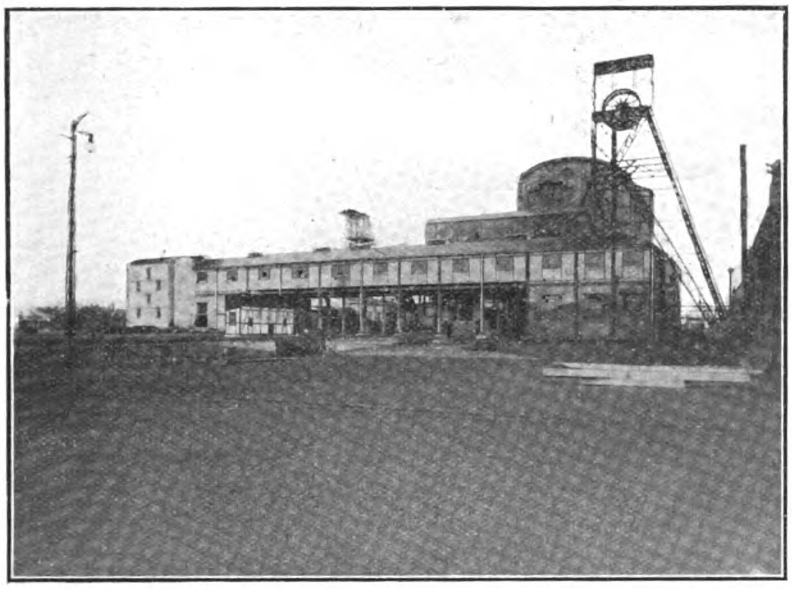
As a result of the special investigation of the Weihsien fields, the Company decided to erect Mining Works there to provide for an output of from 600 tons and a probable increase to 1,000 tons daily. This work was commenced in 1901. When the mine was opened it was found there were three strata, the top one of which 2 metres thick was not worth mining; 40 metres beneath this in a depth of 175 metres the principal stratum was found of about 4 metres depth. The coal contains about 30% of Gas and about 15% ash, and shows a heating power of almost 7,000 calories. Porphyrite presses closely on the coal in parts. A third stratum 35 metres further deep, of about 3 metres depth, is shown to be robbed of a great deal of its gas in parts by the porphyrite, but in better situations has still 20% of gas, although unfortunately it contains quite as large an amount of ash. Mining was therefore possible only in the principal layer, whilst the under stratum was used as far as possible for inland supply. As expected, the coal was used largely, for stationary boilers and heating coal in the private and industrial establishments in the neighbouring region and the regions beyond as far as Chingchoufu.

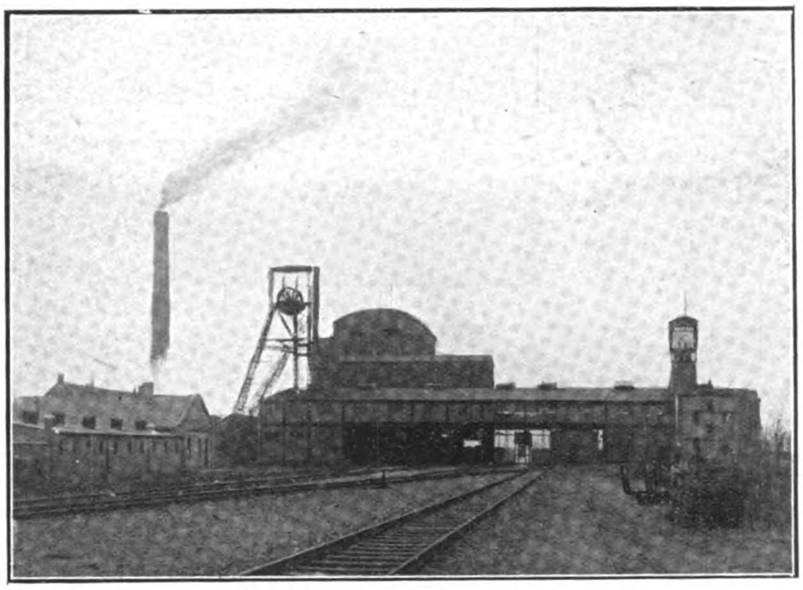
The output did not prove to be so large as was expected at first, so it was decided to make no further extensions, to the mine, but to return to Hungshan where the second of the mines belonging to the Company is situated.

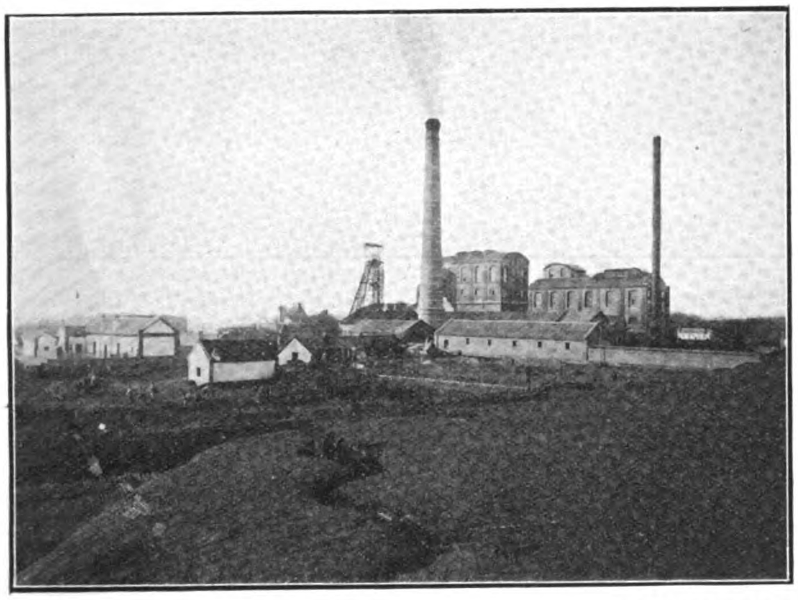
The statistics of the Weihsien Mine for the various years were as follows:—

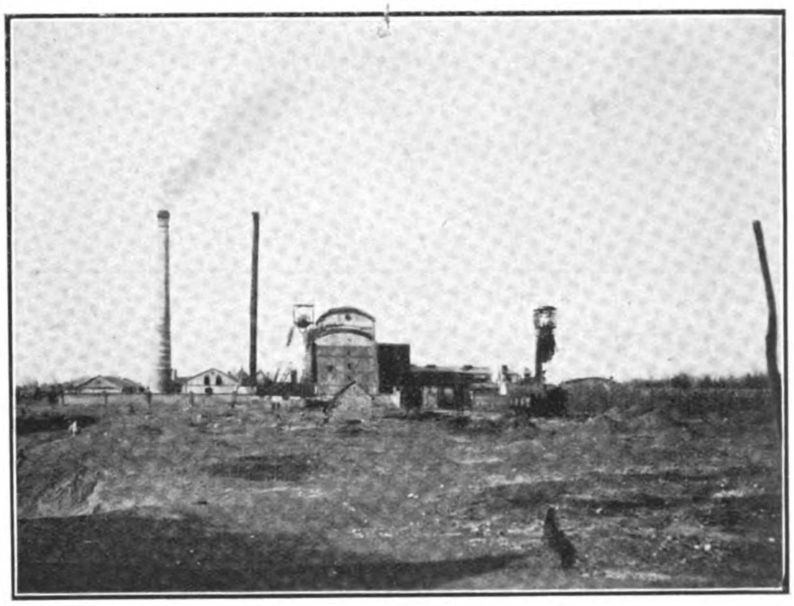
1902/03	9,178.62 tons
1903/04	50,601.03 „
1904/05	100,631.06 „
1905/06	136,990.00 „
1906/07	164,437.05 „
1907/08	149,307.00 „
1908/09	250,214.05 „
1909/10	273,354.05 „
1910/11	193,497.05 „
1911/12	205,185.00 „

1.4.12-31.12.12-126.215,00 tons 1913........199,000.00 tons.







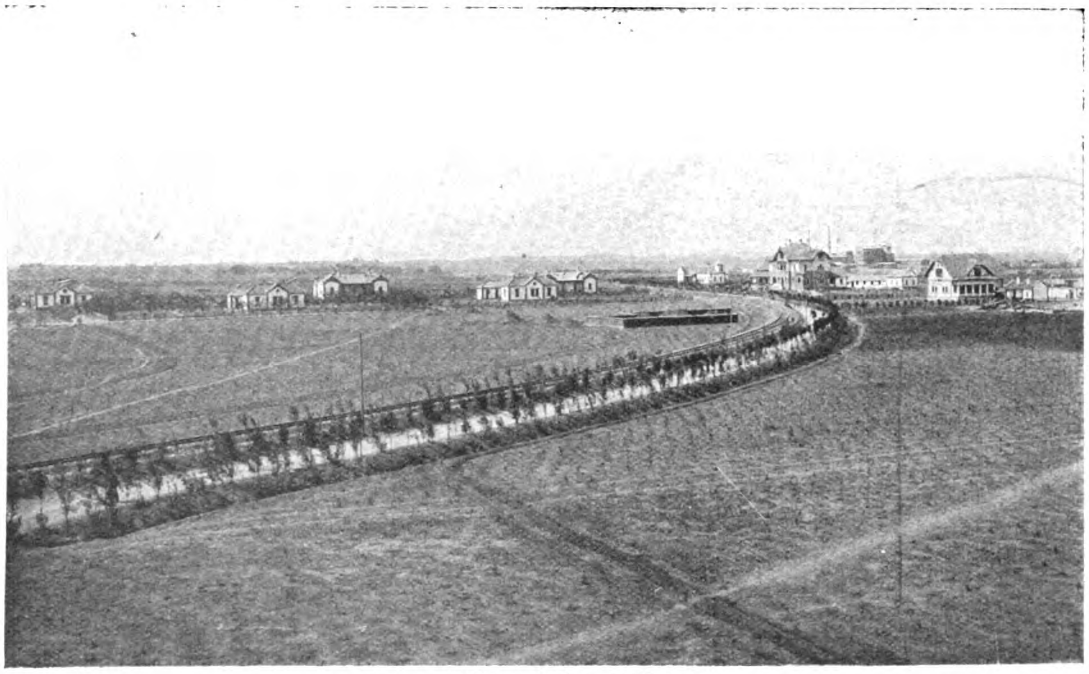


THE FANGTSE COAL MINES.
1. Works with Coal Washer and Briquette Factory—from the south. 3.-4. General View from the East.
2. Main Entrance from West.

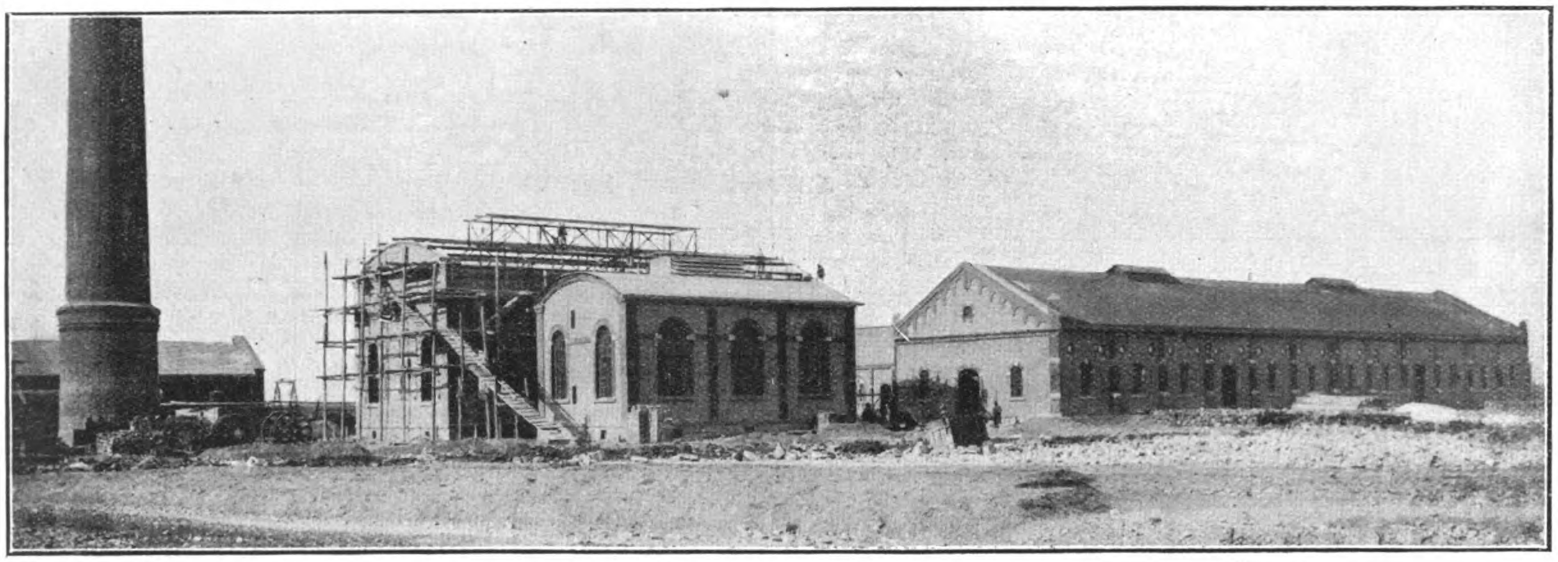
The Works in Fangtze comprise a Double Shaft, a large Repair Shop with foundry, Saw-mill, Coal Separation and Shipping Department, Coal Washer working at rate of 80 tons daily, a Briquette manufactory for 30 tons daily output.

There were on the average about 25 Europeans employed in Fangtze, and 2,000 Chinese. The Europeans lived in a colony together.

In the photographs given, No. 1 shows the Works with Coal Washer and Briquette factory seen from the south, picture No. 2 shows the Mine entrance from the West, pictures 3 and 4 the arrangement of both shafts viewed from the East side.



General View of Fangtse Mines.



Fangtse Mine Buildings.

The progress of the railway having made the further special examination of Poshan possible, this was started in the year 1902 and carried on until 1904 when the first shaft was sunk. It was carried down to a depth of 268 metres when it was found there were 3 strata groups, the first 100 metres underneath the characteristic top layer shows about 16 metres of 4 single strata of 2½ metres altogether of a really first-class rich coal, having about 17% gas, and about 8% ash. The second, group situated about 60 metres from the first, contains 3 strata in 17 metres, having altogether 1.8 metres Coal, likewise of the best quality, but containing on the average 10% ash and only 15% gas, which makes the sale of this Coal just possible. At a further distance of 100 metres a third group of 4 strata is found in a extensive mountain layer of about 20 metres, containing 4.2 metres of an anthracite Coal having 12% gas and the same quantity of ash, but of very considerabie heating value.

Several of the layers are not worth exploiting. They are, however, cheap to work as they lie between good species of soil, so that the cost in wood is small. In practice the coal is found to be excellent steam coal, and also has the special advantage of being almost smokeless so that it is particularly suitable as a substitute for the expensive Cardiff coal used on war ships. Very good hard Coke, suitable for oven heating is obtained from the two top strata groups, so that the 40% of slack from these groups can be turned to most profitable uses. As the coal was found to offer such good advantages, a second shaft was soon made, and was followed by a third shaft with entirely separate mining Works, which rendered possible the separation and expedited the mining of the coal apart from the first and second groups. By the end of the year (1913) the total Works consisted of the following:—

2 Principal Shafts for rich and poor Coal, also an emergency shaft built of stone and iron collectively.
1 Coal Washer for poor coal
1 Coal Washer for rich coal
1 Coal Separator with carriage
1 large Repair Shop
1 Electric Shop

The entire Works produce the following results in figures:—

1906/07	14,646.05 tons
1907/08	40,899.05 „
1908/09	72,467.73 „
1909/10	183,449.84 „
1910/11	237,544.35 „
1911/12	283,208.50 „
1.4.12—31.12.12	299,652.50 „
1913	414,000.00 „

The following statistics show the use to which the coal has been put in the last few years:—

	HUNGSHAN:	FANGTZE:
In use at the Pit itself:	27,200 tons	49,200 tons
Wash and gleanings	44,000 „	20,400 „

Local sale at the shaft: ..	38,000 tons	16,200 tons
Inland sale by rail:	110,300 „	52,100 „
Use on Railway:	19,500 „	14,500 „
Sale in Tsingtau, local sales:	10,000 „	41,600 „
Bunkered and shipped via Tsingtau:	165,000 „	5,000 „
	414,000 tons	199,000 tons

There is an average of about 30 Europeans employed in Hungschan, and about 5,400 Chinese. As the surrounding villages supply plenty of workmen, there is only a home colony for Europeans.

Among the accompanying views of the Hungshan Works, picture No. 1. shows the Works from the eastern side of the pit, picture 2 shows the Works viewed from the south.

In the year 1903 a further investigation was made of the Iron ore at Chinlingchen.

In the mountain range which rises in a northerly direction of about 280 and 300 kilometers from the Shantung railway, are to be found large quantities of iron ore in contact with Diorite and chalk.

At Tiehshan the iron ore is easily traced by the remains of old mining works; there are still blocks of pure magnet iron ore, which the old miners had not the skill to work; the whole is opened up by shafts, galleries and bore holes. The hanging part is of very hard crystalline chalk, and the lower part of quarz augitdiorite. The iron stone continues regularly throughout except for trifling interruptions, and is only adulterated in the lower part with sulphur pyrites.

An average trial of the ore taken from a mass of 3,000 tons out of Gallery 1. showed conclusively:—

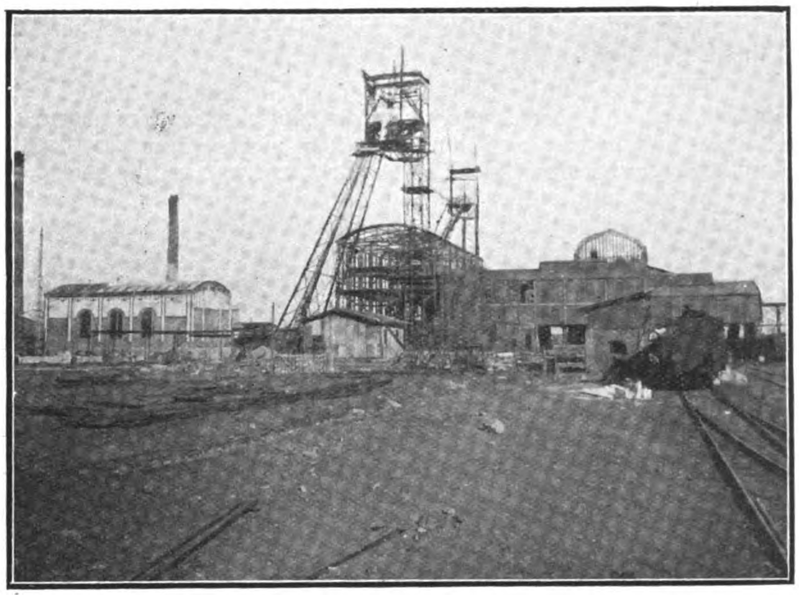
65.42	Fe	Spur	As
0.42	Mn	„	Sn
0.03	P	2.00	$Si_2 O_3$
0.08	S	0.8	CaO
0.09	Gu	0.5	MgO.

At Sypauschen where the ore is found there are not only clear traces of old mines to be seen, but also remains of an old foundry. This ore in particular contains the highest proportion of iron (66.4%) 2.8 per cent. residue, 0.02% S. and traces of phosphor. The ore is therefore the purest iron ore which can be obtained anywhere.

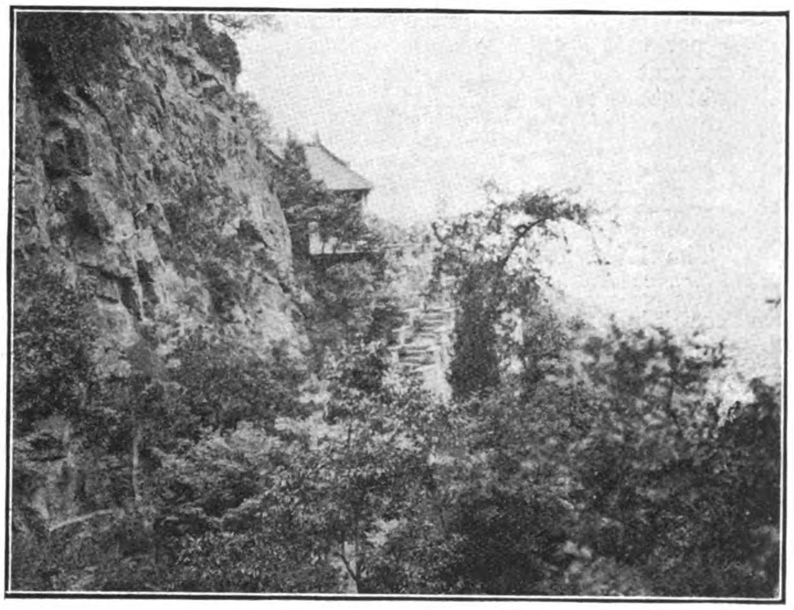
The ascertained supply of ore amounts all together to 49,100,100 tons, more than 20,000,000 tons of which lies in such a position that it can be worked easily and cheaply. This, of course, does not exhaust the supply by any means. The authenticated amount of raw iron still remaining amounts to more than 30,000,000 tons.

Now that the preparatory work has been accomplished in opening up sufficient ore, and it has been proved that good coke can be obtained suitable for heating purposes in the neighbourhood of the Hungshan mine, it has been decided that Iron Works shall be erected at Tsangkou, with a preliminary two Ovens with a daily output each of 130-150 tons. The preparatory work will be expedited to allow of mining being commenced in 1915.

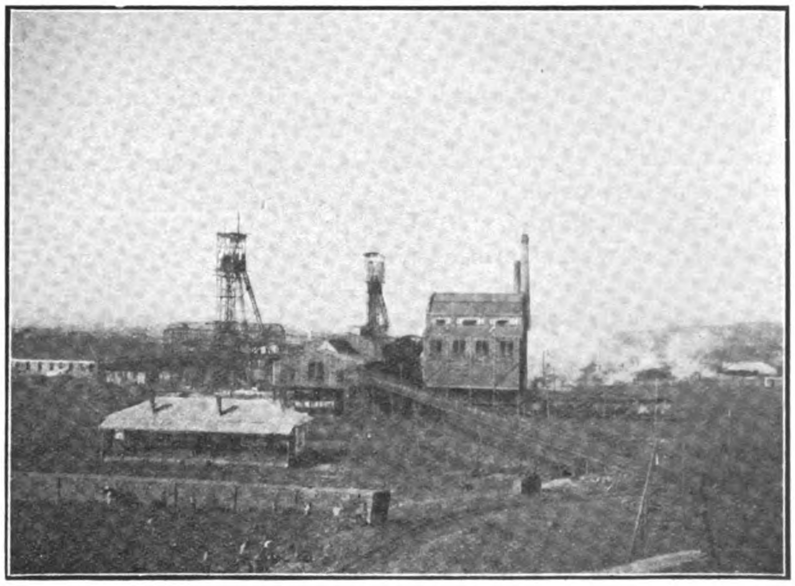
Although it was originally intended to make a further special investigation of the other products on the border of the Tsinanfu-Ytschoufu mountain range, this was deferred, as the Putsun Butschi, Tawenkou, Yhsien, Kuetschou Mining Concessions were returned to the Chinese Government. The Shantung Railway Company had in the meantime been combined with the Shantung Mining Company, and these renounced their claim to extend the railways over Tsinanfu upon the Chinese Government engaging to build the northern part of the Tientsin-Pukow railway line (which was the original concession line of the Shantung Railway Company) with German material and German funds, added thereto under similar conditions also the other line under contract, from Yhsien over Ytschoufu to Kaumi to be carried out as a Chinese Government Railway, whereby the mining rights of the district bordering on the railway line reverted to the Chinese Government.



View of the Hungshan Mine.



Scenery in the Poshan Valley, Shantung.



View of Hungshan Mine.

Prices:—The British Consular Reports for 1910 give the following figures as to the current prices for the products of this Company.

Fangtze Coal:—The coal sent to Tsingtau is treated with machinery and sorted into two sizes; nut coal in pieces from 10 to 40 millimetres, and lump coal in pieces from 40 to 80 millimetres in size. Both sorts are washed at the mines to remove dirt and stones. The nut coal is primarily for use in private houses; the lump coal, mixed with nut coal in equal proportions, is used for industrial purposes and steamers' bunkers. The price of nut coal at the coal yard in Tsingtau is $8.50 (about 14s. 10d.) per ton; that of lump coal, $9 (about 15s. 9d) per ton. Mixtures of the two coals for local use, steamers' bunkers or export shipments are sold. Supplies of these coals are kept at from 1,000 to 2,000 tons on Mole 1 in Tsingtau harbour. As the development of the main shaft near Wei-hsien takes place, the supply will be materially increased. Reports as to these coals are not very favourable. It is stated that their steaming qualities are not equal to those of Japanese coal, and that there is so much hard refuse clinging to the grates that the fire-boxes have to be cleaned twice as often as when other coal is used.

Hungshan Coal:—Of this Coal the fine dust is disposed of in the interior, while a mixture of the pieces and lump coal goes to Tsingtau. In the interior the coal is used for blacksmith's purposes, while that sent to Tsingtau is sold to the German Navy. The contract price with the German Navy is 27s. per ton, with a guarantee that there will not be over 25 per cent. of fine coal or dust. Cardiff coal (6,000 tons) was bought about the same time at 32s. 6d. For loading small loads there is a supply on Mole 1, and for large lots, at the Tsingtau Naval Yard in the Great Harbour.

Mr. H. H. Fox, the Acting British Commercial Attache, in his Memorandum on Chinese Mines issued in 1911 gives the following current prices for the products of the Shantung Mines:—

WHOLESALE Prices per Ton.

	Weihsien.				Hungshan				
At—	Dol.	c.	s.	d.	Dol.	c.	£	s.	d.
Tsingtau	7	0	12	3	11	50	1	0	0
	to		to		to			to	
	9	0	15	9	15	50	1	7	0
	Taels	c.			Taels	c.			
Shanghai—									
Lumps	6	0*	15	0	8	25	1	0	7
Navy lumps ..	..		..		11	0	1	7	6
Nuts	..		..		6	0	0	15	0
					7	0	0	17	6
					8	0	1	0	0

* Weihsien (Fangtze).

TAWENKOW COAL FIELDS

The Tawenkow region is south of Taianfu about 4 kilometers distant from the Tientsin-Pukow Railway. The mines came under the concession granted to the Germans, who surrendered their rights last year. The coal is mined with Chinese methods and semi-foreign style, and give a daily output of about 200 tons. The quality however is inferior.

THE CHUNG HSING COAL MINES

The Ichow coal field, about 15 kilometers southwest of Ichowfu is the most extensive in the province, covering 6,500 square kilometers. The concession was owned by the Prefect of Ichowfu. During recent years mining has been started in five places, all in primitive Chinese fashion. Some 50 pits are being worked, at a depth of about 35 metres and a width of 1.5 metres. The coal is raised by gins and animals, and is good for cooking purposes; the output is estimated at about 30,000 tons annually.

The Yihsien coal-field is considered by far the best in Shantung as regards stratification of the layers, thickness of the seams, and quality of the coal. Besides coal, there is also iron ore of good quality, but not yet worked. The coal-field is in a mould 30 kilometres long and 8 kilometres deep; the upper seam has a thickness of from 2.5 to 10 metres, and the lower, from 0.8 to 1.12 metres. Beyond the mould the field is reported to extend some 10 kilometres in a westerly direction, to near the Tientsin-Pukow Railway, which has built a branch line to Tsaochwang, and has contracted for 60,000 tons of coal annually. Some 60,000 tons are being coked annually. The Yihsien coal-field belongs to the Chung Hsing Mining Company, which was started in the year 1880. In 1898 the company was transformed into a German-Chinese company, and was granted a concession for mining with machinery a field 100 *li* in circumference, and for a railway from the mine to the Grand Canal. In 1908 the two German shareholders were paid out, and the company, which until then had worked with a capital of Tls. 800,000, became again a purely Chinese limited liability company, with a capital of 2.2 million taels, of which the provincial government holds Tls. 100,000.

These mines seem to have been the only ones operated in Shantung at a profit. The capital of the concern was increased to Tls 3,5000,000. The company is operating eight shafts and has just equipped its newest shaft with modern machinery. When this shaft is in full working order 2,000 tons of coal a day will be taken from it, but at present it yields but 500 tons a day.

The machinery for this mine was supplied entirely by German manufacturers, who advanced a loan of 80,000 marks (about $19,000) to the company in connection with the installation of the machinery. The plant includes 10 boilers, pumps, elevators, electric machinery, and cars. The company operates 27 miles of railway in connection with the mine, and for the construction and equipment of this railway German capital and materials were used.

Previous to the construction of the Tientsin-Pukow Railway, the company's products were shipped via the Grand Canal, but now practically all of its coal is shipped over this railroad. The company states that shipping over the canal costs 3 cents Mexican a ton-mile, while shipping over the railroad costs but 2 cents. The coal, which sells at the mine for $2.25 gold a ton, is bituminous and is said to rank with Kaiping coal. The company claims a total of 4,000 tons a day capacity, and besides makes large quantities of coke. It is also preparing to place a superior quality of fire brick of its own manufacture on the market.

The chief engineer and the first assistant of this company are Cantonese who were trained at Tong Shan in Chihli. They have had no foreign assistance in the construction and operation of the company's plant. The chief engineer receives $120 gold a month and his assistant one-half this sum. All of the labor in the mine is on a contract basis, the native miner making an average daily wage of about 10 cents gold. There are about 800 men employed on the company's premises.

The Tientsin-Pukow railway recently constructed a branch line from Lincheng to Yihsien, where it connects with the railway owned by the mining company, this providing a through rail outlet to the market for their coal.

ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

MINING

Working Mines in the Philippines.—The following data in regard to working mines in the Philippines is from official sources:—

Gold Mines, Lode. — In the Mancayan District, in Mountain Province, the past year has been marked by an unusually large production of gold which is recovered by the Igorrots from quartz ledges exposed by landslides. The production for 1914 from this source will amount to, perhaps, P. 75 000.00.

In the Baguio District, in Mountain Province the Headwaters Mine has been idle during the year 1914. The Benguet Consolidated has just commenced the erection of a new mill. The Camote-Clayton Mine has been operating throughout the year at the rate of about P. 1,600.00 a month. Development work has been continued on the Probeck-Ebert Property near the Headwaters, and on the Kelley claims. Mr. C. H. Hulbert has been engaged in the erection of a small stamp mill and amalgamation plant on Batwaan Creek, and a three-stamp mill has been in operation in the Lubang District.

In the Paracale District the old Tumbaga Mine has been operating under the supervision of Messrs. LeDuc and Dudley, and the property and workings at the San Mauricio Mine have been put into order in anticipation of a professional examination of this mine by interested capital. The Nalasbetan States Mining Company has not been in operation during the past year. The Paracale Venture Corporation, an enterprise which plans to treat placer deposits by mining methods, has done only a limited amount of work apparently.

In the Aroroy District in Masbate the Colorado Mine has continued the operation which has been consistent throughout several years, and their 1914 production will probably exceed that of 1913, which amounted to P. 772,124.40. The Syndicate Mining Company, which took over the old Eastern property, began operations on the 1st of February, 1914, and has continued since that date in a satisfactory manner. The output of this mine will be only slightly smaller than that of the Colorado. The Keystone Mine, the capacity of whose mill is somewhat less than the capacity of either the Syndicate or Colorado mills, has been in operation throughout the last year. A three-stamp mill has been operated by Charles Schwab on the property known as the Schwab claim and has produced small amounts of bullion during the past year. Prospecting is being actively pursued elsewhere in the Aroroy District, but no further production is reported for 1914.

Several veins are being explored on the property of the Cansuran Mining Company in Surigao Province, but as yet there is no production from lode mining in this Province.

Placer Mining.—The Paracale District has been the most active in 1914, as in previous years. Small quantities of placer gold have been recovered from Mountain Province, from the Cabu River in Nueva Ecija Province, from the Binabay River in Mindoro, and from several districts in Mindanao outside the Cansuran District. In the Paracale District seven dredges have been in operation in 1914. The Gumaus dredge has yielded the largest individual output, some of its monthly runs having exceeded two thousand ounces. The Australian companies, including the Philippine Dredges Ltd., the Philippine Dredging Proprietory Ltd., the Paracale Bucket Dredging Proprietory Ltd., and the Philippine Dredging Syndicate, operated four dredges during 1914, three of which were on the Paracale River and one on the Malaguit River. The Malaguit Dredging Company purchased a modern dredge from the Yuba Construction Company and began operations in March, 1914, on the Malaguit River. The Maximello dredging Company, with its small dredge on the upper part of the Paracale River, has reported excellent progress during the past year and has made complete amends for the failure of the same dredge under the administration of the old Stanley Dredging Company. The combined production of the dredges in the Paracale District for the year 1913 exceeds P. 640,000.00.

The Australian companies operating in Paracale contemplate the erection of several new dredges in the near future, and the Mambulao Placer Company, under the direction of Joaquin Casanovas, is at the present time purchasing a dredge from America which will be placed on the property of this company at the head of Mambulao Bay as soon as possible.

The Umari Gold Ltd. has completed its dredge on the Umari River in Tayabas Province on the east coast of Luzon and is at present engaged in working through the territory which intervenes between the mouth of the river where the dredge was built to the claims which are to be worked.

The Cansuran Mining Company in Surigao Province, Mindanao, has installed a complete hydraulicing plant and at this date (November, 1914) has just begun hydraulicing operation. Work on this property would have started earlier but for the exceptional drought which Surigao Province has experienced during the past year.

In iron mining the several small Filipino companies in Bulacan Province have continued operations during the year 1914, and their combined output will probably exceed that for the year 1913 which amounted to P. 64,000.00. These companies smelt rich iron ores in a crude way and manufacture cast iron plow points and shares from their product. An attempt is being made to exploit the iron ore deposits at Mambulao Bay, Camarines Province, in a similar manner, but the enterprise has not as yet progressed very far.

The most interesting feature of Philippine iron mining during the current year has been the reported discovery of an immense deposit of high grade limonite ore in Surigao Province, Mindanao The deposit has not been examined officially yet and the alleged great quantity of ore available, therefore, has not been confirmed.

In copper mining the best known district, namely the Mancayan-Suyoc District in the Mountain Province, has not been active. The men who control this property have simply kept up development work. Considerable interest has arisen concerning some recently discovered deposits of metallic copper and copper oxides in Zambales Province, and numerous claims have been located on these deposits.

There has been desultory operation on gold-and silver-bearing lead ore on the Island of Marinduque, Tayabas Province, and some shipments of this ore have been reported.

There has been no operation in coal mining during the past year, and interest in petroleum resources has likewise been quiescent.

Some exploration has been carried out on the asphalt or gilsonite deposits in Leyte, and a number of claims have been located in this region.

Gold Production in British India.—It is stated that the production of the gold mines of India during the first six months of 1913 amounted to 293,577 ounces, as compared with 289,991 ounces during the corresponding period of 1913.

ELECTRICAL

Singapore Tramways.—The annual report of the Singapore Electric Tramways & Power Co. for 1913, presents "for the first time a balance on the right side," the year's profits having been $45,672. The tramway has 15 miles of track, and carried over 16,000,000 passengers last year, an increase of nearly 2,200,000. Receipts per car-mile were 19 cents in 1913, against 17 cents in 1912. No dividend was paid, the concern having purchased at various discounts $260,843 of its own debentures, of which $163,513 have been canceled and $97,330 kept alive and carried as a credit. The capital now stands at £100,000 ($486,650). The chairman states that the company anticipates starting annual dividends from next year. He added: "A strong reason for deferring the question of dividend is that the board has for long had under consideration a recommendation of their manager to construct a parallel line of tramway in the most densely inhabited part of Singapore town, and if that were carried out it would cost a large sum."

Electric Machinery in Japan.—Hitherto most of the dynamos and other electric machinery in Japan have been supplied by the General Electric, the Westinghouse, and the Siemens-Schuckert companies, American, English and German respectively, says a Japanese contemporary. The Tone Electric Co., however, is said to be making a notable departure, having ordered the construction of three dynamos of 6,000 kilowatts each, in Japan. These machines are to be made by the Hitachi Works, and the iron pipes, for the same power installation are to be supplied by the Shibaura Works. It is believe that these orders are the precursors of a large industry in Japan. It is certainly a good time to make the attempt, when the European trade is so badly interrupted, and there is a large supply of cheap copper in Japan.

Shanghai Tramways.—The following is the traffic return of the Shanghai Tramways (Foreign Settlement) for the week ended October 21, 1914, with figures for the corresponding week last year:—

	1914. $	1913. $
Gross receipts	24,924.88	25,147.00
Loss by currency depreciation.	6,533.22	5,563.64
Effective Receipts	18,391.66	19,583.36
Percentage of loss by currency depreciation	27.98	23.26
Passengers carried	1,113.994	1,048,047
Car miles run	59,541	58,437

Week ended October 28.

	1914. $	1913. $
Gross receipts	22,884.79	24,306.54
Loss by currency depreciation	6,138.92	5,338.99
Effective receipts	16,745.87	18,967.55
Percentage of loss by currency depreciation	29.80	23.12
Passengers carried	1,025.284	1.009.929
Car miles run	58,645	57,843

Week ended November 4.

	1914. $	1913. $
Gross receipts	25,345.52	23,882.23
Loss by currency depreciation.	6,864.84	5,248.22
Effective receipts . . .	18,269.68	18,634.01
Percentage of loss by currency depreciation . .	29.07	23.13
Passengers carried. . .	1,123,429	988,211
Car miles run	60,159	57,055

Week ended November 11.

	1914. $	1913. $
Gross receipts	24,993.00	24,350.61
Loss by currency depreciation.	6,742.47	5,181,66
Effective receipts . . .	18,250.53	19,168.95
Percentage of loss by currency depreciation . .	28.71	22.41
Passengers carried. . .	1,110,162	1,003,493
Car miles run	61,071	58,903

HARBOR, IRRIGATION AND CONSERVANCY WORKS

Conservancy of the Liao River.—It is likely that little will be done at present in carrying out the Liao River conservancy scheme owing to the outbreak of war Europe. The local consuls of foreign countries have been informed that the Foreign, Japanese, and Chinese Chambers of Commerce have elected their representatives, who, in accordance with the agreement, automatically become members of the Conservancy Board. The completion of the executive committee rests with the consular body.

Siberian Proposed Harbor Works.—As foreshadowed some time ago, certain construction work has now been decided upon in the Russian Far East. In an interview with Engineer G. L. Faierman he stated that a port will be constructed at Alexandrovsk, Saghalin, at Government expense. Its cost will be $3,000,000, and it provides for a possible annual output from local coal mines of 806,000 tons.

In June, 1914, the port of Nicolaevsk will be turned over to the Ministry of Commerce and Manufactures. Engineer G. L. Faierman has been appointed chief constructor of this port. A dredging fleet costing $515,000 has been ordered for Nicolaevsk, and dredging will begin not later than the beginning of navigation in 1916, perhaps before. During the 1914 navigation period the way from Nicolaevsk to Palevo stream will be properly marked to enable ships going to Mago to take several million poods (pood=36.1128 pounds) of beans which are being shipped to that point via the Amur River, instead of as heretofore by rail to Vladivostok.

During the 1914 navigation period Tetiuhe Bay will be investigated by Engineer F. S. Saloff with a view to its improvement at an early date.

F. M. S. Port Swettenham Improvement.—The F. M. S. Railway program for the present year includes fixing the position of a duplicate line between Kuala Lumpur and Port Swettenham. This port, the most important in the Federated Malay States, is becoming more popular as a port of call for ocean-going steamers running between Europe and the Far East. The fleet of 65 lighters will be augmented during the year by 10 new steel lighters, and other arrangements have been made by the railway department to facilitate the discharge and loading of cargo. The new quarantine station, now nearing completion, is of a design that has created a good deal of interest among experts in quarantine matters.

Harbor Improvements at Keelung.—One of the most important public works now being carried on by the Taiwan Government is the improving of the harbor at Keelung. This port is the most important in the island, as the greater part of the trade with Japan goes through it, and the subsidized liners connecting with Kobe and Moji and averaging two steamers per week all run to Keelung. The prevalence of typhoons and the destruction they cause during certain seasons of the year make good harbors imperative. The present total dredged anchorage area of the Keelung harbor is 518 acres, more than half of which—or 286 acres—has a depth of 30 to 90 feet. In the inner harbor four steamers of 6,000 tons each can be accommodated alongside the quay; six steamers ranging from 2,000 to 10,000 tons can be berthed at the buoys. The outer harbor provides an anchorage for two steamers of 20,000 tons. During the year 1913 not much work was done at Keelung. A length of 480 feet of sea wall, varying in depth from 4 to 12 feet, was built; steel warehouses covering 28,800 square feet were erected, and reinforced-concrete warehouses covering 30,240 square feet were also constructed. The chief work planned at Keelung for 1914 is the construction of steel warehouses with an area of 52,200 square feet, the building of some 14,000 feet of sea wall, the placing of 21 mooring buoys, and the addition of six 1½-ton cranes and two 10-ton cranes to the equipment. About 780 feet of breakwater will also be built.

Work on Takao, Anping, and Tansui Harbors.—The harbor at Takao, which is not naturally so well protected as that at Keelung, has received a great deal of attention. Over 7,000 feet of sea and quay wall, varying in depth from 9 to 30 feet, was built; eight mooring and two harbor buoys were placed, and eight electric cranes were provided, of which number two are 15-ton and the other six are 2-ton. Steel-frame warehouses covering 43,200 square feet were erected and 68 acres of land reclaimed. There are inner and outer harbors. In the inner there are 35 acres with a depth of 12 to 18 feet below low water and 130 acres with a depth of 18 to 30 feet at low water. In the outer harbor there are 2 acres with a depth of 12 to 18 feet and 47 acres 18 to 30 feet deep at low water. In 1914 it is intended to put in 38 more electric cranes (2-ton), which will complete this equipment. Over 280,000 square feet of steel-frame warehouses will be erected, 14 acres of land reclaimed, 2,280 feet of breakwater constructed, and 760 feet of wall for the prevention of the deposit of littoral sand made. When the work is finally completed, there will be 294 acres of water area in the inner harbor with a depth of 30 feet, and 72 acres in the outer harbor with the same depth. The entrance to the harbor has been widened to 350 feet and rocks and sunken reefs removed. The entrance will be widened by another 150 feet, making it 500 feet in width when completed. The anchorage at Takao provides room for nine steamers of 3,000 tons each in the inner harbor. At this anchorage cargo can be worked by lighters with safety.

At Anping a channel 3 feet deep and 60 feet wide was opened in 1913 to a length of 3,780 feet. This channel provides a passage for small boats to the steamer anchorage.

At Tansui an area of 5 acres was dredged in the ship channel, which maintains a width of 360 to 600 feet and is about 18,000 feet in length. The depth at the entrance to this harbor is 10 feet below lowest water in the most shallow part, while the depth in the inner harbor varies from 8 to 25 feet at low water, the mean difference between high and low water being about 8 feet. The inner harbor provides anchorage for 10 steamers of 1,000 tons, or for 5 steamers ranging from 2,000 to 3,000 tons. Considerable trouble is caused at Tansui by the silting of the river after every typhoon and its consequent flood.

BUILDINGS

The tender of the Shanghai Dock and Engineering Co., Ltd., for Tls. 50,000 has been accepted for the construction and erection of steel trusses for the Shanghai Volunteer Dril Hall. Following were the tendersreceived :—

Andersen, Meyer & Co.	£7,500
Nicolas Tsu Engineering Works	7,316
Scott, Harding & Co.	6,779
New Engineering & Shipbuilding Works, Ld.	6,500
John D. Hutchison & Co. £5,130 plus Tls.	4,314
Shanghai Dock & Engineering Co., Ld.	Tls. 50,000
William Jacks & Co.	£4,800

Philippines, New School Buildings.—A new primary school of 20 rooms is to be constructed of reinforced concrete at Cebu by the Bureau of Education at a cost of $27,500; another to cost $7,500 is to be built at Palo, island of Leyte, one-third the cost of which will be borne by the municipality and the remainder by the Bureau of Education. At San Fernando La Union another fine 16-room school building for primary grades is to be built, for which the Bureau of Education has set aside $12,500.

The Germinal Cigar & Cigarrette Factory, Manila, will soon construct a new factory building alongside the present building. The new building will be of reinforced concrete and six stories high, and will cost $125,000. A new concrete and steel warehouse for the factory has just been completed, costing $25,000. When the new factory building shall have been completed it will be the best factory building in the Far East.

New Treasury Building, Peking.—The Ministry of Finance will have a new building at Peking for its offices. The construction of the building is to be undertaken by a German engineer and architect, who guarantees to complete the work at a cost of $100,000.

Manila New Building Ordinance.—The Municipal Board of Manila has passed an ordinance providing that all buildings constructed in the city hereafter must be rat proof. This measure is for safeguarding the public health against bubonic plague. The ordinance was drafted by the director of health and the city engineer. Hollow walls and partitions are forbidden. Walls, with the exception of those of solid wood, must be of concrete, brick, stone, mortar, or other material that will keep out rats, to a height of one meter (3.28 feet) from the ground and must extend below the surface of the ground at least twice the thickness of the wall. All hollow construction is forbidden except it be without apertures through which rats may pass and of materials through which they can not make their way. A penalty is provided for violation of the provisions of the ordinance of a fine not exceeding $100 or imprisonment for not more than six months or both.

F. M. S., New School Buildings.—Plans are in preparation for new schools to take the place of the present St. Michael's Schools at Ipoh, Federated Malay States. New buildings will be erected on Anderson Road, near the new hospital, to accommodate 500 pupils. It is expected that they will be completed within the year.

Mr. Oliver Marks, Acting British Resident, laid the foundation stone of St. George's Institution, the new school which is being erected for the Christian Brothers in Taiping, Federated Malay States, on July 20.

Manila, Cinematograph Theater.—A new modern cinematograph building will shortly be erected in Manila, on the site of the old Majestic Theater, which burned some years ago.

Singapore, New Buildings.—In the way of buildings there has been recently completed in Singapore the new French Bank building, a modern three-story structure, and the new Palladium Theater (moving-picture). The two new buildings of the Chartered Bank of India, Australia, and China, and the new store of Messrs. Whiteaway Laidlaw have been started and are progressing. The new building for the Government printing department in Singapore is completed. This is a structure of brick covering a half square block and is two stories high. The erection of a large garage and showroom in Orchard Road, the principal thoroughfare of the city, was begun by the Central Engine Works. This is to be a modern garage and showroom for automobiles, machinery, engines, etc. It is to be the first modern building of its kind, as heretofore no firm has made a special feature of exclusive garage and showroom for exhibits and demonstrations on a large scale. There was also installed in the Hotel Raffles, the principal hotel of the city, a new 35-horsepower electric lighting plant.

Bangkok, The Chulalongkorn Hospital.—The *Bangkok Times* gives the following information relating to this hospital, otherwise known as the Red Cross Hospital: From notifications in the Government Gazette it appears that the money contributed by the Royal Family to the Red Cross Society for the Chulalongkorn Memorial Hospital amounted to $45,477. When the Red Cross Society ceased its activities, it had in hand a balance of $144,766, and the interest has accumulated to $34,078. In addition to the special contribution from the Royal Family, the Red Cross Society has also been spending its own funds in building and equipping the Chulalongkorn hospital. It is hoped to make this hospital the finest in the Far East and the buildings now finished are only part of what is set forth in the plans. For example, there are only two wards now for patients, but the plan provides for six. Much importance is also attached to the research work and the medical teaching which it is proposed to organize. Plainly, therefore, more funds will be wanted for the completion of the scheme and the maintenance of this extensive organization. The Government is not expected to contribute in any way, but for an institution of this importance there will no doubt be ready and steady response to the public appeal.

Dalny, Permanent Warehouses.—The South Manchuria Railway Co. has received the sanction of the War Office, Tokyo, for constructing permanent warehouse on Dalny wharves, and has decided to build one on the vacant lot on section B and C on Main (west) Quay. The two-story building will be steel trussed and will cost about $200,000, the work to be completed in July, 1915. The contract has been given to a local Japanese contractor, Mr. S. Kato.

INDUSTRIAL

Siam, New Cement Factory.—About one year ago a company was formed to manufacture cement in Siam. Registration of the company was to be effected under Siamese law, several of the promoters being Siamese. The capital was to be $444,000, of which $74,000 was to be given to the promoters in free shares.

The preliminary arrangements have been completed, and it has been decided to locate the plant at Bang Sue, about 5 miles from Bangkok, where transportation facilities will be available for bringing the cement to the capital both by rail and by water. Danish engineers have arrived and will proceed at once with the construction of the factory, the machinery for which has been ordered from Denmark. It is expected that the plant will be in running order in about eight months' time. This will be the first attempt at making cement in Siam, as hitherto it has been imported from abroad.

The total amount of cement imported during the fiscal year 1913 was 21,968 tons, value $218,519, the main sources of supply being Indo-China, with 11,014 tons; Denmark, 9,026; and Hongkong, 1,535.

Swatow Bean Mills 1913.—The two bean cake factories of Swatow did not have a successful year, owing to the fact that Hankow bean cake can be laid down here cheaper than the local mills can market their output made from Hankow beans. These mills were in operation for only five months during the year and turned out 160,000 pieces of cake, of about 62 pounds each.

Motor-Car Service in South Manchuria.—A group of Japanese residents at Pulantien are planning a $10,000 company to start a motor-car service between Pulantien and Pitsuwo. The departures from each end will be twice daily, the accommodating capacity of the motor car being 16. A journey between the two places can be completed in two hours.

New Button Factories in Philippines.—There has recently been a great advance in the Philippines in the demand for shells suitable for the manufactures of buttons. Since the establishment of a second button factory in Manila the price of these shells, the *Trochus nilocticus L.*) has advanced from $4 to $10 per picul (139.44 pounds). The rise in price has stimulated the industry of gathering shells and there is now danger of ruining the industry by gathering young and immature shells. A law is being advocated making it an offense to gather top shells less than 3.5 inches across the base. The increased demand for shells has stimulated a trade in the black-lip pearl shell (*Margaratifera margaratifera L.*) The sudden demand for this shallow-water shell has been so large as to threaten its early exhaustion unless a law protecting it is enacted. Large quantities of this shell too thin for use are constantly being thrown out by the factories.

The factories are now using the "scope" or "ear" pearl shell for buttons. This is the first time that this shell (*Avicula micropterus L.*) has been used in the islands for button making.

Timber Industry in Russian Far East.—A timber company of Melbourne, Australia, and Siberia has decided to move part of its plant from Geelong, State of Victoria, Australia, to Imperial Harbor, on the Sea of Japan Maritime Province. This decision of the company means that sawn material instead of round logs will be shipped to the Australian market. The sawmill will be the largest in the Russian Far East and will bring about considerable development in the soft-wood industry of that region.

The Russian Volunteer Fleet is making great efforts to facilitate the shipment of timber from Eastern Siberia to China, India, Australia, New Zealand, South Africa, and European ports by the establishment of a Vladivostok-Baltic Sea line. This company is understood to be carrying out the desire of the Ministry and the fixing of minimum freight rates for timber is encouraged by the Government.

Japanese Printworks.—It is reported that certain English capitalists, who are interested in the cotton yarn and piece goods business, have on foot a scheme to promote a company in Japan, to be called the Oriental Cotton Printing Co., and to have a capital of 3,000,000 yen ($1,500,000). A letter received by a Manchester house in reference to this says it is rumored that it is a Japanese ex-minister of finance who is endeavoring to interest English capitalists in the project. The idea is that the company would take over the Japan Cloth Manufacturing & Printing Co., which has Lancashire-made machinery, but is said to be unable to find work for the machinery, all the year round. The present price of the company's 50-yen ($25) shares is about 18 yen ($9), and it is suggested that the shareholders would probably be very glad to sell out. The correspondent adds: "There are several smaller printing works, and competition is very keen.

Bamboo Pulp Paper Mills.—The two principal foreign style concerns engaged in the manufacture of pulp for paper from bamboos in the Far East are in the course of reorganization. It is announced that the mill at Kagi, Formosa, owned by the Mitsu Bishi Co., has not only found it difficult to make the business pay in general, but also has suffered from loss by damage from floods and storms until its present deficit is something like 400,000 yen, or $200,000 gold. The mill has been practically closed down since the beginning of the current year, some experimenting being carried on by a few employees while the mill force as a whole has been transferred to the company's Takasago paper mill. The mill of the Societe des Pulpes, the Hongkong concern, in Tonkin, is now said to be on a paying basis if the affairs of the company can be put into normal condition, but it has taken a considerable loss to bring this state of things about for it appears that the entire capital of $600,000 local currency (about $282,000 gold) has been absorbed and there is a deficit of about $220,000 local currency or about $103,400 gold. The mill at present is turning out 15 to 16 tons of pulp marketable at from 290 to 300 francs ($55,97 to $57.90 gold) per ton at current prices. Money for reorganization is being raised in Hongkong.

Cost of Milling of Soya Beans.—According to local authorities the cost of crushing soya beans in one of the Dalny mills is as follows (reduced to dollars per ton of 2,000 pounds):

Items	1910	1911	1912
Office expenses.. ..	$0.481	$0.317	$0.240
Operating expenses	.234	.287	.145
Coal	.265	.598	.409
Pressing	.613	.287	.550
Storage	.189	.129	.076
Interest on capital ..	.175	.149	.122
Total	1.957	1.767	1.542
	Tons.	*Tons.*	*Tons*
Tons of beans crushed	25,218	39,394	43,754
	Pounds.	*Pounds.*	*Pounds.*
Cake made per ton	1,802	1,810	1,817
Oil made per ton ..	198	190	183

A new mill was recently constructed in Dalny by the South Manchuria Railway Co. to demonstrate the modern extraction methods which are in vogue in Europe. An article on the subject appeared in the *Far Eastern Review* for September.

PETROLEUM

Crude Petroleum for the Japanese Navy.—The Chugai Shogyo Shimpo, of Tokyo, contains an article, the substance of which is as follows:

The Nippon and Hoden oil companies have been carrying on negotiations with the Navy Department for the sale of crude petroleum. As a result the Hoden Oil Co. has contracted to supply the navy department with 6,500 tons of petroleum for one year, and the Nippon Oil Co. with 4,000 tons. Up to the present the foreign oil companies, the Standard Oil Co. and the Rising Sun Petroleum Co., have been supplying 285,924 gallons annually to the navy department, but from now on, as a result of these contracts, connections with these foreign oil companies will be entirely severed.

The press of Japan has been publishing glowing reports of the sudden alleged enormous output of petroleum in Akita Ken. A clipping from the Japan Mail gives particulars in this connection.

As a result of the extraordinary gush of oil in Akita prefecture Japanese shipping circles will derive beneficial effects after the Panama Canal is opened. The authorities are under this belief and state that Japan imported oil in 1913 to the value of $6,000,000 gold. If the well in the prefecture yields oil at its present rate its value will be $600,000 in one month. If the oil company will equip suitable receptacles it will not only stop further import of oil, but will amply supply it to foreign markets. In consequence a majority of oil-burning vessels coming to the Pacific through the canal will stop in Japan to take liquid fuel. The number of foreign ships coming to Japan in this way will greatly increase, which will directly or indirectly benefit this country.

Mr. K. Ito, superintendent of the investigation department af the Nippon Oil Co., states: "Work begun on the new well in April. On May 25 the rotary drill at 1,368 feet struck an extraordinary deposit. It is also extraordinary that the company's other five wells in the district, which had required suction pumps, have also begun flowing of their own accord. Many reservoirs have been constructed, into which the flow was directed. The new well was sunk with an 8-inch casing, which has been capped with a 4-way head, thereby controlling the flow. The output has thus been reduced from 480,000 gallons to 120,000 gallons per 24 hours, and when the additional reservoir is filled will again be reduced. In the meantime the other five wells have been checked entirely."

The *Japan Gazette*, however, expresses some doubt as to the exact truth of these reports, and counsels caution in receiving them, pending official and expert confirmation.

WIRELESS, CABLES, TELEGRAPHS

Wireless for Hongkong.—The plans for the new commercial wireless station at Cape D'Aguilar island of Hongkong, are well under way, and it is expected that the buildings will be ready for installation of the wireless equipment by the end of the year. The Hongkong Government has appropriated about $50,000 gold therefore. The station will be on a plateau less than a quarter of a mile behind the Cape D'Aguilar Light, and it is, proposed to have an engine room, accumulator room, transmitting room, and quarters for three operators. The plant is to be of 5 kilowatts, power sufficient for a radius of 500 miles under almost any weather conditions. The station will be connected with Hongkong by telephone and messages received and dispatched will be handled by the post office. No information is yet available regarding the long-range installation which is ultimately to be established somewhere in the colony by the British Government.

Improvements in Far East Cable Service. The cable improvements which have been under construction, have practically been completed by the Eastern Extension Australasia & China Telegraph Co. (Ltd.). This promises to give this section of the world a very much improved service.

Almost simultaneously with the completion of these lines it was announced by this company that week-end telegrams would be received from the 1st of May for the United Kingdom at 17 cents (United States currency) per word and to Germany at 19 cents per word subject to a minimum charge for 20 words in both cases. These week-end telegrams can only be sent from the offices at Penang, Malacca, Singapore, and Labuan, of the Eastern Extension Australasia & China Telegraph Co. (Ltd.). It is anticipated, however, that a service from the Government offices of the Straits Settlements and the Federated Malay States will be commenced shortly.

These week-end telegrams will be accepted any day in the week to be sent off on Saturday night for delivery on the following Tuesday morning. The messages must be written in plain language and will be subject generally to the same rules as deferred telegrams.

While this special service is not available to many parts of the world it will be an excellent thing for the countries reached by messages at this reduced rate.

TRADE NOTES

Growth of Japanese Nail Industry—Iron nail manufacture in Japan has progressed so much in the last few years that the importation of the goods is being effectively checked, according to the latest report of the trade. The industry, in Japan, has progressed so far that the whole home consumption can be supplied from the outturn of the Japanese factories. Prices in the producing countries have been so high that the article can not be imported at a good profit. The market has been influenced to a considerable degree by the general depression in the iron-material market.

Japan has been drawing its supplies of nails from abroad, chiefly from Belgium and America. American prices are on the upgrade, so Japan can not long continue to draw from this market without considerable inconvenience. German nails have decreased in price and can now be imported at a profit.

In Japan, on the other hand, the industry, has been steadily developing. At first the Yasuda Iron Nail Factory, at Fukugawa, was the only manufacture of these goods. In 1910 in Amagasaki, Osaka, another factory was started by Mr. Kishimoto, an Osaka business man. Since then the output has increased steadily and rapidly. In the first years of the industry iron ore from Chosen was imported, with a view to exporting the manufactured output to Chosen again. The result was disappointing. The apparent failure of the Yasuda manufactory called forth the Government, which, as a way of protecting the industry, ordered the Government iron foundry at Wakamatsu to supply good ore to this factory. This proved the turning point of the industry in Japan. Since that time the output has steadily increased in quality and quantity. The factory, with a branch at Wakamatsu, now produces more than 10,000 boxes a month. The Kishimoto factory at Amagasaki, Osaka, with a plant big enough to turn out more than 8,000 boxes a month, is now producing 4,000 to 5,000 boxes a month. In the event of these two factories working to their full capacity their output will more than supply the home demand.

Japanese nails were at first regarded as inferior to imported goods, being weak and easily bent. Now these drawbacks have been improved, and in point of quality the home and imported goods are on the same plane. Furthermore, Japanese goods are, on the whole, cheaper than the imported. Therefore, unless foreign goods are made exceedingly cheap and good they will be surely driven from the Japanese market, and probably from the Asiatic market as well.

New Cotton Mill in Bombay.—Two new cotton mills in Bombay, the erection of which began in 1912, are now completed. One of the new mills, the Simplex, which will be under the management of D. M. Wadia & Sons, has been fitted up with electrical machinery which embodies all the latest improvements. It starts with 20,000 spindles and 800 looms. The other mill, just ready, which will also be worked electrically, is the Pearl mill, the agents of which are Sir Curinbhoy Ebrahim & Sons. At present the mill has 20,000 spindles and 180 looms, which will be increased later on.

The Tata Mills Co. (Ltd.), of Bombay, has issued a statement that some new mill buildings which it is erecting will be completed in the latter part of 1915, and will have 100,000 spindles and 3,000 looms, being the largest cotton factory in the city. It is stated that the directors have not been in a hurry to place orders for machinery, as they hope to take advantage of the decline which has lately taken place in the machinery market.

Motor Cycles Popular in Philippines.—The Philippine Islands are offering a growing market for motor cycles. Figures are not available for an accurate report of the number and value of machines of this sort imported during the last few years. Up to the present motor cycles and bicycles have been classed together in the customs statistics of the islands; but it is evident that the trade in motor cycles is on the increase. Dealers report 1912 as the banner year for the trade so far. Heretofore the buyers of motor cycles in the Philippines have been nearly altogether Americans and Europeans. Three years ago scarcely a Filipino motorcyclist could be found in the islands; to-day there are hundreds of them. Owing to the large number of Americans leaving the Government and other services in the islands within the last eight months the trade in motor cycles among Americans has been at a standstill; but the Filipinos are buying more and more largely. The type of machine preferred by the Filipino buyers is generally the lighter makes. Most of the motor cycles sold to Filipinos go to the Provinces. They are used generally by the hacenderos. One dealer reports that his shipments are usually sold out in advance. This man handles a heavy machine that is preferred by the soldiers and officers of the various Army posts of the islands.

American Shoes in China.—Recent investigations, as made in China by the representatives of American shoemaking machinery, as well as American shoe manufacturers, have resulted in the decision to establish retail stores at Shanghai, Hankow, and Tientsin, for the purpose of handling American-made shoes exclusively.

Salt Supply of the Philippines.—The manufacture of salt from sea water in the Philippine Islands is accomplished by the very crudest methods. The greater part of the salt made is produced by sun evaporation; a small proportion is made by artificial heat. The Chinese have introduced slightly improved methods. About 40,000,000 pounds of crude salt are produced annually. In the Mountain Province a small amount of poor-grade salt is produced by evaporating the water from carbonated springs, but the supply falls far short of the demand and the quality is of the poorest. About 20,000,000 pounds of salt are annually imported. Most of this comes from China. This is chiefly crude. About 1,000,000 pounds come from the United States each year. This consists of the better grades of table salt. The United Kingdom sells the islands about 350,000 pounds yearly; Japan about 300,000 pounds; while Australasia and the other countries supply the rest—about 60,000 pounds.

Increasing Interest in Automobiling at Shanghai.—The interest in automobiling, among both the native and foreign populations, is steadily increasing in Shanghai and other parts of China. The increase in the importation of American cars continues. As far as can be ascertained, the total net importation of automobiles for China during 1913 amounted to $359,862, being an increase of $180,676 over the previous year.

The Automobile Club of China, with headquarters at Shanghai, is increasing its membership, and has elected the following officers for the coming year: President, Dr. N. Macleod; Vice-president, E. S. Little; finance committee,

M. Permezel, E. F. Mackey, and A. W. Burkill.

A committee of 20 has been appointed by the Automobile Club of China to endeavor to arrange for special trade discounts in purchasing automobiles and supplies. The committee will also endeavor to secure an increased number of native chauffeurs and provide suitable regulations for their employment. Another subject for serious consideration will be the extension of suitable roads throughout the Shanghai district and, later on, extending into the far interior of China.

The members of the committee named at a meeting of the Automobile Club of China, held at Shanghai on June 2, 1914, are as follows: Dr. N. Macleod, Sir Havilland de Sausmarez, Commissioner F. S. Unwin, and Messrs. E. F. Mackey, G. R. Laurenz, A. W. Burkill, G. E. Tucker, A. Berg, W. Pucher, F. O. Reynolds, J. C. E. Douglas, C. E. Anton, T. F. Cobbs, E. S. Little, N. Y. Chun, M. Permezel, L. Bourgeat, B. Peebles. W. C. Sprague and Capt. Hilton Johnson. The members of the above committee may be addressed at Shanghai.

Chinese chauffeurs, when properly trained, are considered among the best in the world. They are conceded to be practically without nerves and, for that reason, some of them may be put forward to enter international racing competitions. The salary of a good chauffeur at Shanghai ranges from about $15 to $20 per month.

Japan Imports of Metals and Machinery.—Last year 1913 was one of the worst years in the metal-importing trade, owing largely to a falling off of Government orders. Although iron ore and iron in pig, ingots, etc., showed an increase, there was a considerable decrease in the imports of iron bars, rods, and the like. The chief source of supply of iron ore is China, while pig iron comes from Great Britain, Germany, China, British India, and Sweden. Great Britain is the chief source of supply for galvanized-iron plates and sheets and other plates and sheets, and Germany for iron wire. The United States ranks first in iron pipes and tubes, which showed a large increase over the previous year. The share of the United States in the import of other metals, such as lead, zinc, and nickel, is very small, but it ranks first as a source of aluminum.

In spite of the great industrial progress of Japan, the country is not in a position to compete successfully with European and American manufactures of metals and machinery, and will not be for many years.

Labor-Saving Machinery in India.—The Collector of Surat, Bombay Presidency, India, has issued a report drawing attention to the poor farming now being forced upon his district by labor difficulties, and suggesting that the only hope of improvement must rest in the general substitution of mechanical appliances for labor in the fields.

Mr. A. A. M. Green, I.C.S., assistant collector at Surat, has been at some pains to ascertain how far the state of affairs in his district has accelerated the tendency to employ machinery. He mentions the extended use of hay presses and the working of flour mills, and says the "rhonts," or water wheels, with metal buckets attached to an endless chain, have been purchased in increasing numbers, and the demand for them is so great that their manufacture has been begun in Bulsar. He says:

There are as many as 10 oil engines driving irrigation pumps. One of these has been working for three or four years at Pipalgabhân with great success. There are seven sharers in the concern, who provide the working expenses in proportion to the area of their irrigated land. Such co-operation is a most welcome sign, as it does away with uneconomic short-time working, which must always detract from the value of a power-driven pump that has only a small area to irrigate.

Wiser owners send a son or servant to Bombay to learn how to run their engines and how to effect minor repairs and have little trouble. A moderate number of iron plows are in use, but not much headway has yet been made with them. The old-fashioned wooden sugar-cane crusher has been almost universally superseded by iron machines.

Imports of Molasses into Hongkong.—The imports of molasses in various forms into Hongkong are continuing in considerable volume and the trade seems to be upon a rather firm basis. Most of the imports are purchased in Java. Prices paid in Java for the product can not be ascertained, but it is known that they are very low and that there are places in Java where the prices are so low that it does not pay to move the product. It comes almost entirely in kerosene tins, packed in cases, two tins to the case. At present dealers pay 40 cents local currency, or about 19 cents, gold, per case of two tins for transportation from Java to Hongkong. About 150,000 piculs or about 10,000 short tons of molasses, including blackstrap, are imported by the Chinese firms making a specialty of the trade. The best grade runs as high as $1.70 local currency, or $0.80¾ cents gold, and the poorest at $1 local currency, or 47 cents gold, per picul of 133⅓ pounds. The present average price for the average quality is between $1.50 and $1.60 local currency, or from 71 to 75 cents gold, per picul. The product is used largely in the manufacture of spirits and various vinegars and sauces peculiar to the Chinese and also used to some extent in the preserve trade.

Waste Silk Market in Japan.—The effects of the war on the Japanese waste silk market are reported as damaging as those on the raw silk market, business having been brought to a standstill. Simultaneously with the outbreak of the war all negotiations in the market were dropped and the market altogether closed.

The contracts entered into this season amount to 700,000 kin (933,333 pounds) for "kibiso," 210,000 kin (280,000 pounds) for "noshi," 180,000 kin (240,000 pounds) for re-reels, 150,000 kin (200,000 pounds) for pierced cocoons, and 140,000 kin (186,666 pounds) for waste cocoons. Prior to the trouble about 22 per cent. of the contracts were delivered, leaving the remaining contracts unfulfilled.

While delivery has thus become difficult, goods are daily arriving from all centers. Though under the war influences those arrivals have lately fallen off, still more than 100 bales are received daily at Yokohama. Therefore the visible stock at the port, which was increasing every day, stood on August 8 at 24,000 bales or more.

Chinese Government Purchases of Explosives.—The Chinese Government manufactures no high explosives, but purchases same from abroad, chiefly from Germany and Austria. This business is handled chiefly through German firms located in Peking and Tientsin, which make a specialty of supplying war materials to the Chinese Government.

The Government has 15 arsenals located throughout the country. Some of these are not running at present and it is stated that none are running to their utmost capacity. These arsenals are located in the following cities: Canton, Kwangtung Province; Chengtu, Szechuan Province; Foochow, Fukien Province; Hanyang, Hupeh Province; Hangchow, Chekiang Province; Kaifeng, Honan Province; Lanchow, Kansu Province; Nanking, Kiangsu Province, Sianfu, Shensi Province; Shanghai, Kiangsu Province; Taiyuanfu, Shansi Province; Tehchow, Shantung Province; Tsinan, Shantung Province; Urumtsi, Sinkiang Province; Yunnanfu, Yunnan Province.

The largest powder factory operated by the Government is in connection with the Canton Arsenal. Here both smokeless powder and black powder are manufactured. In addition there are a few small arsenals that manufacture black powder of an inferior grade. One of these is at Kaifeng and another at Yunnanfu.

However, the Government purchases most of its smokeless powder abroad and also a fairly large quantity of black powder.

There is no Government bureau or department which has charge of the purchase of supplies of war materials. When war materials are needed the military organization concerned makes a petition to the Board of War, which, after giving its consent, makes the necessary arrangements for the purchase.

Japanese Cotton Goods Exports.—The cotton mills of Japan have sold to foreign customers this year a much greater quantity of yarns and fabrics than ever before. The export figures for the first four months of 1912, 1913, and 1914 are as follows:—

Classification.	1912 *Quantity.*	1913 *Quantity.*	1914 *Quantity.*	1912 *Value.*	1913 *Value.*	1914 *Value.*
Yarn..............kin[1]...	25,483,000	47,831,000	60,267,000	$6,476,000	$12,213,000	$15,929,000
Cloth....................	—	—	—	3,639,000	5,303,000	6,150,000
Towels...........dozen...	685,000	1,081,000	1,325,000	318,000	449,000	540,000
Underwear........do......	1,078,000	1,249,000	1,536,000	803,000	969,000	1,143,000
Total..................	—	—	—	11,236,000	18,934,000	23,768,000

[1] Kin = 1⅓ pounds.

Arms and Ammunition Trade in Siam.—The present firearms and ammunition law came into operation in Bangkok in October, 1912, and has since gradually been extended to the other districts of Siam, and while formerly the importation of ammunition and firearms into this Kingdom was prohibited, this law, under certain restrictions, provides permission for the manufacture, import, trade, and possession of the same. Six European firms have now received licenses for trading in firearms and ammunition, and it is understood that a very profitable trade in this line is in progress.

Although this law only came into operation during the latter half of the fiscal year ended March 31, 1913, yet the imports in small arms, rifles, fowling pieces, and revolvers advanced from 746 in number for 1911-12 to 1,141 for 1912-13, and in rounds of ammunition from 819,357 to 926,877. The figures for the fiscal year 1913-14 are not yet available, but from information obtained from licensed dealers it appears that the above figures have been more than doubled during this period, and at present the trade is still advancing.

In order to avoid delay and complications with the customs regulations at Singapore during transhipment the goods should be

shipped by steamers calling at Bangkok direct and at present only the East Asiatic Co. (Ltd.) maintains a Bangkok-European direct line of steamship service.

Chinese Vegetable Tallow.—The exports of Chinese vegetable tallow increased from 28,579,867 pounds in 1912 to 29,446,380 pounds in 1913. Of these totals 67 per cent. was exported from Hankow. Exports from Hankow to the United States amounted to 3,410,591 pounds in 1912 and 2,565,385 pounds in 1913. The tallow sells on the local market for 9 to 12½ taels per picul ($4.37 to $6.07 per 100 pounds).

Soya Beans Replace Poppy Culture.—Owing to the suppression of the use of opium in China, and the elimination of poppy cultivation, other crops are being planted. Consul E. Carleton Baker, of Chungking, states that soya bean growing has been started in that district in lieu of poppies.

FINANCIAL

China's Foreign Loans.—According to the *Pingpao*, the Customs Administration has prepared a list of the Foreign loans to become due in the next year of the Republic. The total amount of the loans to be due month by month next year is shown as follows:—

January	£150,182
February	152,370
March	150,182
April	150,182
May	150,182
June	218,883
July	218,848
August	150,182
September	150,182
October	150,182
November	150,182
December	150,182

The total amount is £1,941,639 or Taels 20,800,000, at 2s-8d to one tael.

A Japanese-American Commercial Bank.—The establishment of the Japanese-American Commercial Bank is being promoted by Messrs. Eiichi Shibuzawa, president of the First bank, Buei Nakano, president of the Tokyo Chamber of Commerce, Kenji Imanishi, director of the Chuya Savings Bank, and other representative business men. It will be organized with an initial capital of $1,000,000, and will have its head office in Tokyo, with branches and agencies at the principal centers of Japanese immigration in the United States, Mexico, and South America.

Mr. Imanishi informs the American embassy that there is at present no financial institution for the accommodation of Japanese immigrants, and that the main object of the proposed bank is to meet this need. It will advance money to Japanese merchants, manufacturers, and farmers resident in the countries named, with a view to assisting them in the development of their enterprises and to promoting the expansion of the foreign commerce of Japan, by enabling the smaller merchants to take a share in the export and import trade.

Japanese Bank at Harbin.—The Japanese banking office which has been opened at Harbin will do a small credit business. It is a joint-stock company with a capital of 150,000 rubles ($77,250 U. S. currency), made up of 3,000 shares of 50 rubles each, of which each shareholder has already paid one-fourth. This bank is intended especially to serve the interests of the local Japanese population.

Russian Bank in Mongolia.—The Chamber of Commerce, St. Petersburg, has applied to the authorities concerned for the establishment of a Russian bank in Mongolia.

Capital and Industry in Japan.—With Mr. Hayakawa, director of the Mitsui Bank, as its prime mover, a new movement has for some time past been under way among business men. In the opinion of Mr. Hayakawa and other promoters of the movement the slow progress of industry in this country is largely attributable to the lack of an institution adjusting the relation between capitalists and "enterprisers." At this juncture, when market depression is impending, it is highly desirable to have an institution whose function is to promote the harmonious working of capital and enterprise by underwriting promotion loans.

The movement is reported to have found many supporters among business men, and some of them, including Baron Shibusawa, Mr. Okura, Mr. Ohashi, Mr. Otani, Mr. Ono, Mr. Wakao, Mr. Nakano, Mr. Yasuda, Mr. Azabuki, Baron Kondo, Mr. Asano, etc., have already promised to give material support to the scheme. The Government, on the other hand, is said to have consented to make the realization of the scheme easy by effecting necessary alterations in the laws or regulations governing banking establishments.

Thus the scheme will shortly be under way. The following lines of business will be undertaken by the new institution: (1) Guaranteeing the tax payment or the transference of mortgages, in the event of the new institution being granted special privileges by the Government to do so; (2) contracting for public works or guaranteeing the supply of materials for Government works; (3) guaranteeing the fidelity of Government merchants or traders; (4) underwriting the loans or debentures; (5) insuring fidelity of employees.

COMPANIES

Liaoyang Electric Light Co.—At the fifth annual general meeting of this company the following accounts were passed:—

Net profit for the term	Y. 9,722.52
Brought over from the preceding term	1,735.58
	11,458.10
Disposed of as follows:—	
Reserve fund	Y. 5,000
Bonus to officers	720
Dividend to shareholders at 8 per cent. per annum	4,800
Carried forward to the next term	938.10
	11,458.10

Toyo Kisen Kaisha:—The following is the profit and loss account for the first half year:—

	Yen.
Net profit for the first half year	101,514.53
Brought over from last account	8,978.45
Total	110,492.98
To be distributed:	Yen.
Loss reserve	5,100.00
Dividend at 6 per cent per annum on new shares	97,500.00
Carried forward to next account	7,892.98

Douglas Steamship Co., Ltd.—The General Managers' report for the year ended June 30, 1914, was as follows:—After paying all running expenses, docking charges, premia of insurance, remuneration of the consulting committee and auditors' fees, there remains a balance at credit of profit and loss account of $90,684.25, which, with the approval of shareholders it is proposed to appropriate as follows:—

To pay a dividend of 6 per cent. on the capital of the Company, absorbing $60,000 and to write off the balance of $30,684.25 from the value of the Company's properties.

Cargo has been fairly plentiful throughout the year and rates of freight on the coast have shown a slight improvement.

The steamers and other properties of the Company have been maintained in good order, but the expenditure for repairs and upkeep has been heavy.

North-China Insurance Co., Ltd.—The report of the directors for the period ended June 30, 1914, states that the balance at credit of the 1913 account is Tls. 285,284.40 and, after deducting an interim dividend of 12½ per cent. aggregating Tls. 47,713,72 paid on May 1 last, there remains a sum of Tls 237,570.68 which the directors recommend should be appropriated in the following manner:—A final dividend of 12½ per cent. on the paid-up capital, making 25 per cent. for the year; a bonus of 15 per cent. upon contributory premium; £10,000 transferred to Sterling reserve, bringing that fund up to £160,000; and the balance to be transferred to underwriting reserve account, closing the account for 1913. The balance at credit of working account to June 30, 1914 amounts to Tls. 304,968.60.

Toyo Kisen Kaisha.—The general meeting of shareholders of this company was held recently at Tokyo when the following accounts were passed:—

	Yen.
Net takings for the term	101,514.53
Brought over from last account	8,978.45
Total	110,492.98
To be distributed:—	
Loss reserve	5,100.00
Dividend at 6 per cent. per annum on new shares	97,500.00
Carried forward to next account	7,892.99

Hoden Oil Co. (Japan):—The following is the profit and loss account of this company:—

	Yen.
Net profit for the term	1,181,019.79
Brought over from last account	181,248.94
Total	1,362,268.73
To be distributed:—	
Legal reserve	70,000.00
Dividend at 15 per cent. per annum	1,062,020.00
Bonuses for directors, auditors, employees, and hands	70,000.00
Fund for the relief of employees and hands	10,000.00

Meiji Sugar Manufacturing Co.—The profit and loss account of this company is as follows:—

	Yen.
Net profit for the term plus the balance brought over from last account	643,532 62
To be distributed:—	
Legal reserve	33,000.00
Fees for directors and auditors	33,000.00
Dividend at 12 per cent. per annum	535,500.00
Carried forward to next account	42,032.62

Astor House Hotel, Co. Ltd. (Shanghai)—At an extraordinary general meeting of the shareholders of this company the following resolution already adopted at a previons meeting was confirmed:—"That the capital of the Company be reduced from $750,000, divided into 30,000 shares of $25 each, to $150,000, divided into 30,000 shares of $5 each, and that such reduction be effected by cancelling capital which has been lost or is unrepresented by available assets to the extent of $20 per share of each of the 25,520 shares which have been issued and are now outstanding and by reducing the nominal amount of all shares in the Company's authorized capital to $5 per share."

James McMullan & Co., Ltd., (Chefoo).—At the fourth ordinary general meeting of this

company held on October 14, after providing for all charges, depreciation, etc., a dividend of 12½ per cent. was declared, Mex. $,5,000 placed to reserve, an amount set aside for employees' bonuses and Mex. $262.84 carried forward to next year.

New Companies in Korea.—During the year 1913 the authorities of the Government General of Korea granted the necessary permission for the establishment of 27 new companies in Korea. The particulars of these companies are seen from the following table:—

Companies.	No.	Capital.
Joint stock	15	$1,202,670
Limited partnership	7	118,873
Partnership	5	141,930
Total	27	1,463,473

In addition to these permissions sanction was also given during the same period by the authorities concerned for the establishment in Korea of branch offices of companies as follows:—

Companies.	No.	Capital.
Joint stock company with head office in Chosen	1	$49,800
Joint stock companies with head offices in Japan	5	906,360
Limited partnership	1	2,490,000
Partnership	1	249,000
British company with head office in England	1	362,068
American company with head office in America	1	100,000
Total	10	4,157,228

The British company referred to is the Chosen Gold Mines (Ltd.), formed to work a gold mining concession in the southern part of the peninsula, while the American corporation is the local branch of the American-Oriental Engineering & Construction Co.

In addition to these, announcement was made in the Official Gazette of July 16, 1914, of the establishment in Seoul of a branch office of the Singer Sewing Machine Co., an American corporation capitalized at $1,000,000.

New Confectionery Company.—The Far Eastern Confectionary Co., capital $250,000 gold, has been promoted by a number of dealers in Seoul for manufacturing such articles as will readily find a market in Korea, Siberia, Manchuria, and other parts of China.

RAILWAYS

Tokyo Central Railway Station.—The completion of the Central Railway Station, which is to be the principal portal of the metropolis, will be celebrated on February 11 next year, the day of the celebration of the founding of the Empire. From that day on Shimbashi will cease to be the great gateway it now is, lapsing into the obscurity of a freight depôt, and probably even giving up its memorable name to the station that now bears the name of Karasumori.

The celebration was to take place much earlier, as the gigantic main building has already been finished. The delay is due simply and solely to the unexpected delay in the completion of the adjuncts—auxiliary buildings that cover an area of 200 tsubo.

In addition to the present electric railway between Tokyo and Yokohama owned by a private company, there will be a fresh electric double-track of the Government between the two cities when the Central Station becomes Tokyo's main entrance. The Government track will be connected with the Central Station.

While ordinary express trains will stop at Karasumori (it will then be known as Shimbashi) the fastest expresses will go directly from Hiranuma to the Central Station without stop, thus saving two or three minutes.

The next undertaking that the railway authorities are evidently determined to carry out at the earliest opportunity, is the establishment of direct connection between the Central Station and Uyeno. Already the purshase of grounds along the projected elevated route has been effected, and despite the difficulties of war finance it is believed that the work will be started in April next, to be completed in three years. A branching station will be built at Kaji-cho, Kanda, where the branch to Manseibashi will be connected with the Central-Uyeno line.

PERSONAL

Captain Archibald F. Commiskey, 7th. Cavalry, United States Army, has been appointed aide-de-camp to the Governor-General of the Philippine Islands.

The first-class of the Chiaoho decoration has been conferred upon Sir Richard Dane in recognition of his services in connexion with the reform of the Salt Gabelle.

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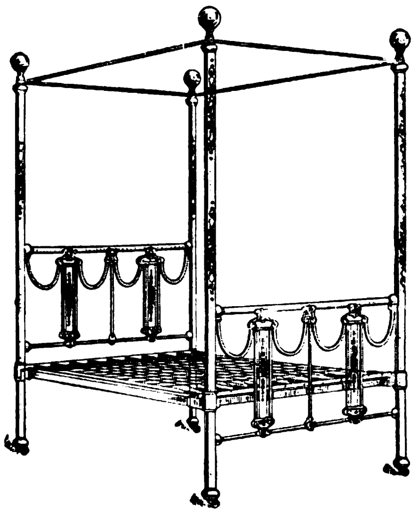

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Cia. General de Tabacos
Pacific Mail S. S. Co.
Ynchausti & Co.
Toyo Kisen Kaisha.

Steel Manufacturers
United States Steel Products Export Co.

Steel Works
Bohler Bros. & Co., Ltd.
U. S. Steel Products Co.

Stokers
Babcock & Wilcox Ltd.

Structural Steel
Bohler Bros. & Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.

Sugar Machinery
A. F. Craig & Co.

Superheaters
Babcock & Wilcox Ltd.

Tanks
Pacific Tank and Pipe Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.
A. F. Craig & Co.

Telephones
The Western Electric Co.

Textile Machinery
A. F. Craig & Co.

Tiles and Bricks
Green Island Cement Co., Ltd.
Chinese Eng. Mining Co.

Tobacco Dealers
British-American Tobacco Co., Ltd.
Cia. General de Tabacos
Olsen & Co., Walter E.

Tools
American Tool Works Co.
Lodge & Shipley Machine Tool Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.

Windmills
Defiance Machine Works.

Water Softeners
Babcock & Wilcox Ltd.

Wood Working Machinery
American Tool Works Co.
Defiance Machine Works.
Lodge & Shipley Machine Tool Co.
Shanghai Dock & Engineering Co., Ltd.

SUPPLEMENT TO

THE FAR EASTERN REVIEW

SHANGHAI

NOVEMBER

1914

TREATIES CONVENTIONS DECLARATIONS LOAN AGREEMENTS CUSTOMS AND RAILWAY REGULATIONS RELATING TO SHANTUNG

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CONVENTION BETWEEN THE GERMAN EMRIRE AND CHINA RESPECTING THE LEASE OF KIAOCHOU

The incidents connected with the Mission in the Prefecture of Tsaochaufu, in Shantung, being now closed, the Imperial Chinese Government considers it advisable to give a special proof of their grateful appreciation of the friendship shown to them by Germany. The Imperial German and the Imperial Chinese Governments, therefore, inspired by the equal and mutual wish to strengthen the bonds of friendship which unite the two countries, and to develop the economic and commercial relations between the subjects of the two States, have concluded the following separate Convention:—

ART. 1.—His Majesty the Emperor of China, guided by the intention to strengthen the friendly relations between China and Germany, and at the same time to increase the military readiness of the Chinese Empire, engages, while reserving to himself all rights of sovereignty in a zone of 50 kilom. (100 Chinese li) surrounding the Bay of Kiaochou at high-water, to permit the free passage of German troops within this zone at any time, as also to abstain from taking any measures, or issuing any Ordinances therein, without the previous consent of the German Government, and especially to place no obstacle in the way of any regulation of the water-courses which may prove to be necessary. His Majesty the Emperor of China, at the same time, reserves to himself the right to station troops within that zone, in agreement with the German Government, and to take other military measures.

ART. 2—With the intention of meeting the legitimate desire of His Majesty the German Emperor, that Germany, like other Powers, should hold a place on the Chinese Coast for the repair and equipment of her ships, for the storage of materials and provisions for the same, and for other arrangements connected therewith, His Majesty the Emperor of China cedes to Germany on lease, provisionally for ninety-nine years, both sides of the entrance to the Bay of Kiaochou. Germany engages to construct, at a suitable moment, on the territory thus ceded, fortifications for the protection of the buildings to be constructed there and of the entrance to the harbour.

ART. 3.—In order to avoid the possibility of conflicts, the Imperial Chinese Government will abstain from exercising rights of sovereignty in the ceded territory during the term of the lease and leaves the exercise of the same to Germany within the following limits:—

(1.) On the northern side of the entrance to the bay:

The peninsula bounded to the north-east by a line drawn from the north-eastern corner of Potato Island to Loshan Harbour

(2.) On the southern side of the entrance to the bay:

The peninsula bounded to the south-west of a line drawn from the south-westernmost point of the bay lying to the south-south-west of Chiposan Island in the direction of Tolosan Island.

(3.) The Island of Chiposan and Potato Island.

(4.) The whole water area of the bay up to the highest water-mark at present known.

(5.) All Islands lying seaward from Kiaochou Bay, which may be of importance for its defence, such as Tolosan, Chalienchow, etc.

The High Contracting Parties reserve to themselves to delimitate more accurately, in accord with local traditions, the boundaries of the territory leased to Germany and of the 50-kilom. zone round the bay, by means of Commissioners to be appointed on both sides.

Chinese ships of war and merchant-vessels shall enjoy the same privileges in the Bay of Kiaochou as the ships of other nations on friendly terms with Germany; and the entrance, departure, and sojourn of Chinese ships in the bay shall not be subject to any restrictions other than those which the Imperial German Government, in virtue of the rights of sovereignty over the whole of the water area of the bay transferred to Germany, may at any time find it necessary to impose with regard to the ships of other nations.

IV.—Germany engages to construct the necessary navigation signals on the islands and shallows at the entrance of the bay.

No dues shall be demanded from Chinese ships of war and merchant-vessels in the Bay of Kiaochou, except those which may be levied upon other vessels for the purpose of maintaining the necessary harbour arrangements and quays.

V.—Should Germany at some future time express the wish to return Kiaochou Bay to China before the expiration of the lease, China engages to refund to Germany the expenditure she has incurred at Kiaochou, and to cede to Germany a more suitable place.

Germany engages at no time to sublet the territory leased from China to another Power.

The Chinese population dwelling in the ceded territory shall at all times enjoy the protection of the German Government, provided that they behave in conformity with law and order; unless their land is required for other purposes they may remain there.

If land belonging to Chinese owners is required for any other purposes the owner will receive compensation therefor.

As regards the re-establishment of Chinese Customs stations which formerly existed outside the ceded territory, but within the 50-kilom. zone, the Imperial German Government intends to come to an agreement with the Chinese Government for the definitive regulation of the Customs frontier, and the mode of collecting customs duties, in a manner which will safeguard all the interests of China, and proposes to enter into further negotiations on the subject.

SECTIONS II AND III.

The Chinese Government sanctions the construction by Germany of two lines of railway in Shantung. The first will run from Kiaochou and Tsinanfu to the boundary of Shantung province via Weihsien, Tsinchow, Pashan, Tsechuen and Suiping. The second line will connect Kiaochou with Chinchow, whence an extension will be constructed to Tsinan through Laiwuhsien. The construction of this extension shall not be begun until the first part of the line, the main line, is completed, in order to give the Chinese an opportunity of connecting this line in the most advantageous manner with their own railway system. What places the line from Tsinanfu to the provincial boundary shall take in en route are to be determined hereafter.

II.—In order to carry out the above mentioned railway work a Chino German Company shall be formed, with branches at whatever places may be necessary, and in this Company both German and Chinese subjects shall be at liberty to invest money as they so choose, and appoint directors for the management of the undertaking.

III.—All arrangements in connection with the works specified shall be determined by a future conference of German and Chinese representatives. The Chinese Government should afford every facility and protection and extend every welcome to representatives of the German Railway Company operating in Chinese territory.

Profits derived from the working of these railways shall be justly divided pro rata between the shareholders without regard to nationality. The object of constructing these lines is solely the development of commerce. In inaugurating a railway system in Shantung Germany entertains no treacherous intentions towards China, and undertakes not to unlawfully seize any land in the province.

IV.—The Chinese Government will allow German subjects to hold and develop mining property for a distance of 30 li from each side of these railways and along the whole extent of the lines. The following places where mining operations may be carried on are particularly specified along the northern railway from Kiaochou to Tsinan, Weihsien, Pashanhsien and various other points; and along the southern Kiaochou-Tsinan Chinchow line, Chinchowfu, Laiwuhsien, etc.

Chinese capital may be invested in these operations and arrangements for carrying on the work shall hereafter be made by a joint conference of Chinese and German representatives.

All German subjects engaged in such work in Chinese territory shall be properly protected and welcomed by the Chinese authorities and all profits derived shall be fairly divided between Chinese and German shareholders according to the extent of the interest they hold in the undertakings.

In trying to develop mining property in China, Germany is actuated by no treacherous motives against this country, but seeks alone to increase commerce and improve the relations between the two countries.

The Chinese Government binds itself in all cases where foreign assistance, in persons, capital or material, may be needed for any purpose whatever within the Province of Shantung, to offer the said work or supplying materials, in the first instance to German manufacturers and merchants engaged in undertakings of the kind in question.

In case German manufacturers and merchants are not inclined to undertake the performance of such works or the furnishing of materials, China shall then be at liberty to act as she pleases.

The above Agreement shall be ratified by the Sovereigns of both the Contracting States, and the ratifications exchanged in such manner that, after the receipt in Berlin of the Treaty ratified by China, the copy ratified by Germany shall be handed to the Chinese Minister in Berlin.

The foregoing Treaty has been drawn up in four copies, two in German and two in Chinese, and was signed by the Representatives of the two Contracting States on the 6th March, 1898, corresponding to the 14th day of the second month in the twenty-fourth year of Kuang-hsu.

(Great Seal of the Tsung-li Yamen)
The Imperial German Minister,
(Signed) Baron von Heyking.
Li Hung-Chang (in Chinese)
Imperial Chinese Grand Secretary,
Minister of the Tsung-li Yamen, &c., &c.
Weng Tung-Ho (in Chinese)
Imperial Chinese Grand Secretary, Member of the
Council of State, Minister of the Tsung-li Yamen, &c., &c.

CONCESSION GRANTED BY THE IMPERIAL GERMAN GOVERNMENT FOR THE CONSTRUCTION AND OPERATION OF A RAILWAY FROM TSINGTAU TO TSINANFU

In response to a request made by the Deutsche-Asiatischen Bank (German-Asiatic Bank) representing the Syndicate, formed for the establishment of a German-Chinese Company with the title of "Schantung Eisenbahn-Gezellschaft" (Shantung Railway Company) the Imperial Government agrees to grant to said company a concession for the construction and operation of a railway in the Chinese Province of Shantung, from Tsingtau via Weihsien to Tsinanfu with a branch line, starting from a point on the main line, to Poshan, according to the provisions of the German-Chinese Treaty of March 6, 1898, and under the following conditions:—

1.—The construction and maintenance of the railway shall be proceeded with by a German-Chinese Company, to be organised by the Syndicate upon the basis of the contract hereto attached.

This company will have its domicile at first in Berlin but will nevertheless remove the same to Tsingtau within six months from the date of granting the concession.

2.—The capital for the construction and operation of the railway is fixed at 54 million Marks.

Care is to be taken that Germans as well as Chinese may participate in the public subscription to the stock of the company. More especially, shall subscriptions be opened in the suitable commercial centers of East Asia, and the amounts there subscribed shall receive proper consideration

3.—The management of the railway shall be domiciled at Tsingtau The election of the President of the Board of Directors as well as the Chief Operating Official must be approved by the Imperial Government.

4.—The following regulations govern the construction of the railway:

I.—In the building of the railway lines the special preparatory work shall determine the best possible connection with the most important coal fields, more especially with those of Weihsien and Tzechuan as well as the chief cities and towns between Tsingtau and Tsinanfu, which, on account of their population or other significance, must be considered in their relation to railway traffic.

In the construction of the railway station at Tsinanfu consideration is to be given to the connection with the Hoang-ho and the continuation of the railway on the one side to the southern boundary of the Province of Shantung in the direction of Kiaochou (Chinkiang), on the other side following the North Boundary of the same Province in the direction of Tientsin and Chengting.

The Company must obtain from the Imperial Governor permission to carry out the railway line, in accordance herewith, in the territory of Kiaochou; outside the territory the permission of the Imperial Minister in Peking is to be obtained.

The lines may be built for single track; however sufficient land for the construction of a double track must be provided.

The gauge shall measure 1,435 meter.

II.—German material shall be used, as far as possible, in the construction of the railways.

III.—The completion and opening of the main line from Tsingtau to Tsinanfu, and of the branch line to Poshan must follow within a period of 5 years, dating from the grant of the concession, and that of the railway section from Tsingtau to Weihsien within a period of 3 years. Should the company be prevented from the fulfillment of these obligations by force major, the fixed periods shall be respectively extended.

5.—The following stipulations shall obtain for the operation of the railways:

I. The Governor of Kiaochou is to be notified of the proposed opening of the railway on any one section at least three days in advance of the time set.

II. The railway is to be equipped in due time with rolling stock according to the requirements of traffic. The material used shall be, as far as possible, of German origin.

The company binds itself to permanently maintain the railways, buildings, workshops and rolling stock, including the telegraph plants, in good order and condition, in order that transportation may be made with security and according to the stipulations of the present contract. The company shall be held responsible therefor by the Imperial Government, but no stricter regulations shall be issued for railways outside of the Protectorate then those in force on the majority of the railways in China, built and operated under similar circumstances. The railway police regulations applicable within the Protectorate shall be in force along the line of railroad operation.

III. The number of trains to be despatched is left to the discretion of the company, but it must meet the necessities of traffic as far as possible. The establishment of a schedule and changes therein are subject to the approval of the Governor of Kiaochou, with the understanding that no greater obligations shall be required of the company than in the case of the majority of other railways built and operated under similar circumstances in China.

The time table is to be made public in due time.

IV. The fixing of the tariff for transporting passengers and freight on every railway section is left to the discretion of the company for the first ten years, beginning on January 1st following the opening of the railway, but the maximum rates for the transportation of coal, to be fixed by the Imperial Government after consultation with the company, may not be exceeded. Subsequent to this time, that is after the expiration of the ten years specified above, it is optional with the Imperial Government to fix the maximum rates for the various classes of passengers and goods every five years; within these limits the company shall be at liberty to fix the charges of transportation. All maximum rates to be fixed by the Imperial Government shall, however, not be lower than the maximum rates of the majority of railways built and operated under similar circumstances in China.

Rates for transportation as well as changes therein must be made known to the Governor before adoption, and shall be published in due course. Increased rates, should they not be approved by the Governor, shall come into force three months after publication only.

V. Use of the railway is to be granted to everybody under similar conditions. Especially the rates fixed for transportation are to apply equally to all persons or goods of the same class. Facilities of transportation which under fulfillment of the same conditions do not benefit everybody are inadmissible. Exceptional tariffs require the approval of the Governor of Kiaochou.

Upon demand of the Imperial Government the company is obliged to allow other contractors to connect with the railway by means of private connecting tracks or junction railways upon refunding to the Company the expenses incurred thereby, should the Company itself not build connecting tracks or junction railways within a reasonable time. The Company is further obliged to undertake the operation of the private connecting tracks and furnish the necessary means of transportation, for which it is to receive suitable compensation, and further, for a likewise reasonable compensation, to allow the passages of the necessary transportation material of the junction railways.

6.—Should the company culpably offend against one of the obligations imposed upon it by this document and not comply in due time with the injunction given by the Imperial Government to make good the offense, the Imperial Government may hold the company responsible for the losses accruing to the traffic through its fault, in an adequate sum of money.

Whether there has been a culpable offense on the part of the company, and whether in consequence of such offense the order of the Imperial Government has not been properly complied with, and what amount shall be paid for accrued damages, shall be finally determined by a Court of Arbitration to be formed as provided for in Section 7.

All moneys hereafter to be paid by the company shall be paid into the Treasury of the Imperial Government of Kiaochou.

Should a culpable action of the company relative to one of the imposed obligations contained in this document result in the railway section not being constructed or operated in due course, the Imperial Government is authorized to take over itself, or cause to be taken over by a third party, the construction or extension of the railway and the organisation or continuation of the traffic, all at the expense of the company. The question as to whether such a culpable action on the part of the company exists is also to be finally decided by the Court of Arbitration to be formed according to paragraph 7 of this document.

7.—The Court of Arbitration, provided for in Article 6, shall be formed in such manner that each party appoints two arbitrators and these shall elect an umpire. The Imperial Government will name its arbitrators to the company and, at the same time, request the company to appoint their arbitrators within four weeks, counting from the day of the handing in of the summons, and to name them to the Imperial Government. If the company does not comply with this summons in due time, the Imperial Government will also elect the necessary arbitrators. The umpire is elected by a majority vote. In the case of a tie the umpire will be appointed by the President of the Hanseatic Upper District Court. The regulations of the Tenth Book of the Civil Process, unless otherwise stated in this document, shall hold good for the arbitration proceedings.

8.—During the life of the concession, conveyed in this document, the Imperial Government will not grant to any other contractor the right to construct a railway section, running parallel in the same direction with the concessionary lines to the same points, or touching at several of their principal places.

9.—The Imperial Government of Kiaochou shall cede to the company such land in the Protectorate necessary for the construction of the railway, provided it is the property of the Government and, according to the declaration of the Governor, not indispensable for Government purposes, upon payment of the price prevailing in the locality, but which shall not exceed 125,000 marks. The Imperial Authorities will, as far as possible, assist the company at their request to acquire more land if necessary, should it lie in the protectorate or in the Province of Shantung.

10.—The Imperial Government will grant to the company, upon their request, the concession for the construction and operation of the railway from Tsinanfu to Ichoufu and from Tsingtau to Ichoufu, under conditions corresponding to those contained in this document.

As regards these railways, the company is free to await the end of the year 1908 before presenting this request. The concessions not solicited in due time can be otherwise granted by the Imperial Government.

11.—The company shall pay a contribution from the yearly net profits of the railway to be applied to the expenditures of the Government for the harbor works in the Bay of Kiaochou and also to the general running expenses of the Protectorate, which contribution is to be estimated as follows:

If after the opening of the traffic of the railway from Tsingtau to Tsinanfu, the net earnings of the railway would permit the payment of a yearly dividend of more than 5 per cent. of the paid up capital which is used in operating the railway, there shall be paid into the Government funds of Kiaochou the twentieth part of any surplus over 5 to 7 per cent., the tenth part of any surplus over 7 to 8 per cent., the fifth part of any surplus over 8 to 10 per cent., the third part of any surplus over 10 to 12 per cent., and the half of any surplus over 12 per cent.

12.—The Imperial Government reserves the right to purchase the railways to be constructed by the company in accordance with this concession, after the end of sixty years, calculated from the date of the grant of the concession. The Imperial Government further reserves the right to buy at the end of every five years, including a one year's previous notice, all establishments, rolling stock, appurtenances, inclusive of the reserve and renewal funds earned by the railway enterprise, upon payment of twenty-five times the amount of the average dividends paid during the last five years from its earnings, or at least however, the commerciai value of the existing railway plants, workshops and rolling stock. In case there should be any doubt in ascertaining the value, a Court of Arbitration, formed according to Article 7, shall decide. Should no sum obtain the majority of the votes cast the one nearest the average of the sums named by the individual arbitrators shall be accepted. The decision of the Court is final.

13.—The transfer, in whole or in part of the concession granted to the company, according to this document the rights and obligations appertaining to it in exercise of the same, under maintenance of its concessionary character, as well as any alteration in the contract, must, to become valid, have the approval of the Imperial Government.

The transfer of the concession itself or parts thereof to another company, not German or German-Chinese, is prohibited.

14.—The Imperial Government reserves the right of appointing a commissioner according to Article II of the second part of the German, Chinese Treaty of March 6, 1898.

15.—A copy of this concession document will be delivered to the company as soon as the company is regularly formed by the Syndicate.

16.—The charges for all expenses incurred in this document, especially the stamp duties, shall be borne by the company.

Baden-Baden June 1, 1899.

IMPERIAL CHANCELLOR,
Prince zu Hohenlohe-Schillingsfurst.

KIAOCHOU-TSINANFU RAILWAY AGREEMENT

The Agreement for the construction of the Kiaochou-Tsinanfu Railway was signed on March 21, 1900. The terms of the Agreement are as follows:—

ART. 1. According to the second clause in the Second Section of the German-Chinese Convention after the Tsaochou Mission Affair, the building of a railway line from Kaiochou to Tsinanfu by a Chino-German Company is sanctioned, and in this Company, both German and Chinese subjects shall be at liberty to invest money.

At first, the management of this Company shall rest with the Germans, temporarily. A report of the shares taken up by the Chinese shall be made every six months to the Shantung Bureau of Foreign Affairs, and as soon as these shares shall exceed the amount of Tls. 100,000, the Governor of Shantung shall appoint a satisfactory official to become a member of the company and assist in clearly defining the regulations.

ART. 2. If said Company shall hereafter establish any branch office within the Province of Shantung, this Province will then appoint a satisfactory Chinese official for said branch office to assist in matters of consultation and operation.

ART. 3. The Governor of Shantung shall appoint a special official to assist in the locating of the railway; the high local officials or prominent gentry of various places will also be invited to assist. This will be done in order that the conditions of the various places may receive no injury. But as to scientific questions, these shall all be settled by the Engineer, and in all matters relating to the buying of land, the specially appointed official must be consulted. When the route has been investigated, the Company must prepare a map of the lines showing all the conditions, the scale to be 25,000 to 1, which map is to be handed in to the Governor of Shantung, after which the matter of buying the land will be considered, and as soon as the land is all purchased, the work on the construction can begin. But as to the buying of the land, this matter must be managed as heretofore, with uniform promptness and peacefulness, that the owners of land may have no excuse for putting obstacles in the way, which would result in delaying the work. The Company will be permitted to buy only so much land as is actually needed in the construction of the railway, including what will afterwards be needed for the operation of the line. For small car-housing stations, it will be permitted to buy a piece of land about 630 metres long (1 metre=2 ft. 9.6 in. official measure, and 1 ft. official measure=338 millimeters), and about 70 metres wide. For large car-housing stations it will be permitted to buy a piece of land about 730 metres long and about 100 metres wide. For railway stations of medium size a piece of land 850 metres long and 130 metres wide can be bought adjoining the walls (of the cities). For large railway stations the amount of land that can be bought will depend upon the special conditions of the case, except only that the necessary amount shall be the limit. When it is necessary, however, to buy earth to use in making fills or elevations, it will not be understood that this must all come from within the limits set down above.

ART. 4. In the construction of the line, whenever the Company finds a place upon its land where a space should be left for water to flow—whether a bridge should be built or a sluice opened—they must leave satisfactory space for the flow, in order that no harm or hindrance shall come to the populace or their fields.

ART. 5. The railroads must not injure or obstruct any city walls os public works within the Province, nor any important strategical positionr that may be used for protection.

ART. 6. In constructing the railway, the Company must go around small villages and market towns, also ancestral halls, temples, graveyards, dwellings, and water-ways, orchards and vegetable gardens. These must not be made to suffer on account of the railway. And as for specially large and well arranged graveyards, these must receive special regard. In cases where it is impossible to avoid them, the matter should be thoroughly looked into and discussed by both parties, and the high local officials must be requested to give two months' notice to the owner of the property, that he may construct a new graveyard at another place modeled after the original one. Any person in such a case, moreover, must not be subjected to any financial loss.

ART. 7. In buying land the Company must use the Chinese units "kung" and "ch'ih" for measuring, one "kung" equalling five "ch'ih." (1 ch'ih=338 millimeters, and in any locality one "mu"—360 "kung" or 9,000 square "ch'ih"). The Provincial Treasurer will furnish standard lengths for the "kung" and "ch'ih," that both parties may be guided by them. As to the Government tax, that matter will be dealt with in the same manner as is done in other parts of China where foreigners have bought land for the construction of railways.

ART. 8. In transporting materials and men for the measurement and survey of the land, the Company must keep off of the fields and vegetable gardens of the people, and in cases where real damage has been done by trampling on the fields, and action therefor is brought, the Company will be required by the local high officials to make good the loss, out of pity for the abused party.

ART. 9. Whenever the local officials are requested to appoint some one to assist the company, said company must provide such person with money for meals; and this money must be kept in an entirely different account from that in which the money is kept for the purchase of land from the owners. The latter should be handed over to the local officials, to be received by them and handed over in turn to the owners. At the same time the local officials must send the Company a certificate of purchase for the land.

ART. 10. If the Company desires to rent any buildings or rooms along the line of the railway, they must first notify the high local officials, whereupon the said officials will consult with the owners and draw up a contract for the rent on behalf of the Company.

ART. 11. All materials necessary for the construction of the railroad must be bought at the market price, and a fair price given therefor; or else the local officials may be requested to buy them for the Company.

ART. 12. All silver and other money used by the Company must be exchanged justly at the rate of the place at the time.

ART. 13. The Company will not be permitted to act upon its off from the main line to connect with the mines, for the purpose of bringing down rock, lime, etc., such, for example, as the branch line at Poashan Hsien connecting with the main line—such roads will not come under thih prohibition. But whenever it is desired to build one of these short branes

lines, permission must first be requested from the Governor of Shantung, that he may investigate the matter.

ART. 14. All section men appointed by the Company within the limits of Shantung Province must be provided with passports sealed by the officials of both countries. This is to assist the local officials in giving protection. Without such passport they can not assume the responsibility of protection.

ART. 15. All Chinese or Germans employed by the Company must be supplied with special certificates to that effect; sealed both by the local officials and the Company. This will facilitate the detection of imposters. When the road is being laid out, as well as when it is being constructed, it will be the duty of the Chinese officials to appoint men section by section, to accompany and assist (the railway employees) in looking after their things—such as wooden stakes, etc. Should any falsely assert himself to be in the employ of the Company, he shall be arrested and punished by the local officials.

ART. 16. Should it ever happen that it becomes necessary for soldiers to protect the railway outside of the 100 li zone (Kiao-chow concession) the Governor of Shantung shall detail such soldiers, and foreign soldiers can not be used. The Governor of Shantung having consented to use his utmost endeavors to protect the railway both in time of construction and operation, he must see to it that the railway receives no injury from bandits.

ART. 17. The object of constructing this line is solely the development of commerce, and it will not be permissible to transport foreign soldiers or munitions used by foreign soldiers to any place outside of the 100 li zone. If by any chance, the peaceful relations existing between China and any foreign Power become broken, the railway will still remain under the management of the Company, but the company must still observe the above rule. But if the offices are seized by an enemy, and the Company loses its control, then this Province will no longer assume the responsibility of protecting the line.

ART. 18. Should the Province be visited by famine or flood, so that it is necessary to send relief to the sufferers in the form of rice or clothes; or should there be any riot necessitating the use of soldiers, such soldiers (with their arms, provisions, and baggage) and such relief (as mentioned above) must be shipped at reduced rates according to such regulations as Germany has in her own country.

ART. 19. The Company must make satisfactory arrangements for the easy collection and receipt along its line, of such likin and Customs duties as are collectible in the Province on merchandise and domestic animals. As to the erection of Custom Houses, etc., the Customs officials of this Province will first discuss with the Company the amount to be expended, after which that matter will be taken up.

ART. 20. In the construction of the railway, the Company must employ among their men, people who live in the various villages along the line: and the Company shall also trade with them, that they may not be left out in the cold as it were.

ART. 21. All Chinese employed by the Company outside the German concession shall, if they break the law, be tried by the high local officials; and when a local official notifies the Company that according to Chinese law, a certain man should be tried as an offender, said offender shall not be given improper protection, or be in any way screened by the Company. If there be any offenders or law-breakers among the foreigners employed, and action be brought against them, they shall be tried by foreign law, and it will be the duty of the Company to make a thorough investigation of the case, and not show undue favor.

ART. 22. Competent men must be picked for work on the road, and natives of the place must be used as far as possible. Moreover, the price to be paid for labor must depend upon the various conditions of the place. If the laborers get into quarrels with the people, it will be the duty of the Chinese officials to arrest them and deal with them according to the law.

ART. 23. After the completion of the road, special men shall be detailed to watch and repair the line. Old residents in the various respective districts—men who have considerable means—shall be intrusted with the hiring of these men, in order to guarantee that the men who are hired will all be peaceful and reliable characters. Moreover, those who are intrusted with the hiring of the men must obtain from the local officials certificates for the men they hire. This is for convenience in investigation.

ART. 24. After all work in connection with the railway is completed and the road is being operated according to regulation, should there be any accident resulting in the injuring of any Chinese or damaging their property, the Company must repay them for their losses according to the conditions. At all times notices must be conspicuously placed. Damages must be paid also for all losses or injury to life or property caused by error or carelessness in the handling of the trains. Before the road is entirely completed, and when trains are running according to temporary schedule, this rule that damages must be paid for all losses or, injury to life and property caused by error or carelessness in the handling of the trains, likewise holds good.

ART. 25. If there ever be any dangerous places in this province, such as flooded districts, fallen trestles, or damaged bridges, interfering with the operation of the railway, then these obstructions must be removed before the road can be operated again according to regulation.

ART. 26. If at any time, whether it be when the road is being located, constructed, or operated, the Company for some reason requests the Governor of Shantung to furnish soldiers for protection, it shall be his duty to investigate the matter immediately and grant the request, sending sufficient guards of soldiers to the place where they are needed. As to the amount of extra money which the Company shall pay such guards, this will be considered apart.

ART. 27. The title of and authority over all railroad lands outside the German concession, so far as they rested in the former owner originally, will revert from him to the Governor of Shantung. Title to, and authority over, the railroad lands within the German concession will revert to the German Governor.

ART. 28. The Chinese Government shall have the right to buy back this railroad in the future, but as to this matter, it will be considered separately later.

After the above articles have been adopted, signed, and sealed, they shall be sent to the Department and District officials, as well as to the various railway officials, that all may become familiar with them and act accordingly. Hereafter, if any alterations or additions are deemed necessary, they can be made only by consultation of the Governor of Shantung, or such competent and experienced officer as he may appoint, and the Company.

(Sgd.) YIN-CH'ANG,
Manager of Railway and Mining Affairs, etc., etc., etc.,
YUAN (SHIH-K'AI),
Vice-President Board of War, Governor of Shantung, etc., etc., etc.

Kuanghsu, XXVIth Year, Second Moon, 21st Day. March 21st, 1900.
(Signed on the part of the Chino-German Co. by Schmidt and Michaelis.)

BRITISH AND GERMAN AGREEMENT RE RAILWAY CONSTRUCTION IN CHINA

Minutes of Meeting held at New Court, St. Swithen's Lane, London, on the 1st and 2nd September, 1898.

Present:—Representing the German Syndicate—M.A. von Hansemann. Representing the British and Chinese Corporation, Ltd.—Mr. W. Keswick. Representing the Hongkong and Shanghai Banking Corporation—Mr. Ewen Cameron, Mr. Julius Brussel.

M. VON HANSEMANN proposed the following:—"It is desirable for the British and German Governments to agree about the sphere of interest of the two countries regarding the railway constructions in China, and to mutually support the interest of either country." This proposal was agreed to.

The following proposal of M. von Hansemann regarding the British and German spheres of interest for applications for Railway Concessions in China, viz.

"1.—British sphere of interest, viz.—The Yangtsze Valley, subject to the connection of the Shantung lines to the Yangtsze at Chinkiang: the provinces south of the Yangtsze; the province of Shansi with connection to the Peking-Hankow line at a point south of Chengting and a connecting line to the Yangtsze Valley, crossing the Hoangho Valley.

"2.—German sphere of interest, viz.—The province of Shantung and the Hoangho Valley with connection to Tientsin and Chengting, or other point of the Peking-Hankow line, in the south with connection to the Yangtsze at Chinkiang or Nanking. The Hoangho Valley is understood to be subject to the connecting lines in Shansi forming part of the British sphere of interest, and to the connecting line to the Yangtsze Valley, also belonging to the said sphere of interest."

Was agreed to with the following alterations, viz.—"The line from Tientsin to Tsinan, or another point of the northern frontier of the Province of Shantung, and the line from the southern point of the province of Shantung to Chinkiang to be constructed by the Anglo-German Syndicate (meaning the German Syndicate on the one part, and the Hongkong and Shanghai Banking Corporation and the British and Chinese Corporation, Limited, on the other part in the following manner, viz.—

"1—The capital for both lines to be raised jointly.

"2—The line from Tientsin or to Tsinan or another point on the northern frontier of the Province of Shantung to be built and equipped and worked by the German group.

"3—The line from the southern point of the province of Shantung to Chinkiang to be built and equipped and worked by the English Group.

"4—On completion the lines to be worked for joint account." So far the minutes of the proceedings of the meetings, and it is further agreed upon that neither the German Group nor the English Group will be bound to construct the lines assigned to their sphere unless the Shantung lines be constructed simultaneously.

Signed London, September 2, 1898.

Approved of and signed by A. VON HANSEMANN, W. KESWICK, EWEN CAMERON, JULIUS BRUSSEL.

AGREEMENT CONCERNING THE ESTABLISHMENT OF A MARITIME CUSTOMS OFFICE AT TSINGTAU

SIGNED AT PEKING, APRIL 17, 1899.

1. The Commissioner or the Chief of the Maritime Customs Office at Tsingtau is to be of German nationality. The Inspector General of Customs will come to an understanding with the German Legation at Peking in case of appointing a new Commissioner.

2. The members of the European staff of the Maritime Customs Office at Tsingtau shall, as a rule, be of German nationality; in case, however, of a suddenly occurring vacancy or of temporary requirements of the service, members of other nationalities may be provisionally sent to Tsingtau.

3. The Inspector General of Maritime Customs will inform the Governor of Kiaochou beforehand about all changes in the staff of the Customs Office at Tsingtau; this, however, does not apply to the employees of the Chinese staff.

4. All correspondence between the Customs Office at Tsingtau and the German Authorities and German merchants shall be conducted in the German language. Should, however, merchants of other nationalities come to reside at Tsingtau, they shall be at liberty to correspond in their language; correspondence in Chinese shall be likewise permitted.

5. On merchandise brought by sea to Tsingtau no import duty shall be levied. Import duty according to existing Treaties shall be levied by the Maritime Customs office on all merchandise or products passing the German frontier of Kiaochou into the interior of China.

The German Authorities agree to take suitable measures to assist as far as it is possible in the prevention of merchandise passing the German frontier when not provided with a Permit or Pass by the Maritime Customs Office.

6. When Chinese merchandise or products brought from the interior of China into the German territory of Kiaochou are shipped from Tsingtau to other places, they will pay the export duty according to existing Treaties. Produce raised in, and merchandise manufactured from produce raised in or imported by sea into the German territory of Kiaochou shall pay no export duty. The duty to be paid by articles manufactured in the German territory from materials brought there from the interior of China will be settled later.

7. Chinese merchandise or products brought from Chinese treaty ports to Tsingtau shall pay no duty as long as they remain inside German territory; but if these Chinese merchandise or products pass the German frontier into the interior of China, they shall pay according to existing treaties.

8. Chinese merchandise shipped from Tsingtau and having paid accordingly export duty, shall be provided with a receipt, on the producing of which it shall pay, on being landed at a Chinese treaty port, a coast trade duty according to existing treaties.

9. For European and other non-Chinese merchandise on being shipped to Tsingtau from a Chinese treaty port the import duty paid at the latter port shall be refunded by drawback according to Artice 26 of the German-Chinese Treaty of 1861. On being imported to Tsingtau such merchandise shall pay no duty, so long as it does not pass the German frontier into the interior of China. On being re-exported from Tsingtau to other places outside China, such merchandise shall pay no export duty.

10. Chinese merchandise or products having been shipped from a Chinese treaty port to Tsingtau and re-shipped from there to places outside China, shall on this occasion pay no export duty, in case the documentary evidence is produced of their having paid export duty at the treaty port from which they came.

11. The Maritime Customs Office at Tsingtau shall take no part in the collection or administration of tonnage dues, lighthouse dues or port dues.

12. The Customs tariff in force in the Chinese treaty ports shall be applied likewise by the Maritime Customs Office at Tsingtau.

13. The Maritime Customs agrees to levy on all opium brought to Tsingtau the same duties and taxes (likin) which are levied on opium in Chinese treaty ports. The duties and taxes collected on opium which enters into consumption inside the German territory shall be collected by the Maritime Customs for account of the German Government, and be paid over to the latter at certain intervals, to be fixed at convenience.

14. The Government of Kiaochou agrees to set apart for the Maritime Customs Office sufficient space at Tsingtau for building offices, lodgings for the staff, with suitable room for garden, stables, and servants quarters. The amount to be paid for the sale or lease of such ground is to be settled locally by mutual agreement.

15. The Chief of the Customs Office and the members of the staff shall be free from all obligations to act as jurors or assessors or from any other personal services.

16. The Maritime Customs Office at Tsingtau, as designated in the above Articles, shall take charge of the collection of duties, taxes, or likin on all Chinese built vessels (junks) coming to Tsingtau or to other places in the bay of Kiaochou and on all merchandise brought in such vessels. The duties, taxes or other charges collected from Chinese built vessels or from merchandise brought by them to Tsingtau shall not exceed the charges which have hitherto been levied from such vessels and such merchandise at Tsingtau or in other places in the bay of Kiaochou. Should at any time the charges levied on Chinese-built vessels and on merchandise brought by them at other ports in the province of Shantung be less in amount than such charge in the bay of Kiaochou, the latter shall be reduced to the amount levied in those other ports.

17. The aforesaid Maritime Customs Office at Tsingtau shall be charged likewise exclusively with the granting and issuing of transit passes for merchandise going into the interior of China, as well as for merchandise coming from the interior of China to Tsingtau; and this office will be charged as well with all and every function, right, or capacity appertaining in the treaty ports to the so-called Chinese Customs Taotai.

18. For the transit passes mentioned in Article 17, the duty, according to existing treaties, i.e., half of the amount of the export or import duty—shall be collected by the Maritime Customs office at Tsingtau.

19. The procedure to be observed in case of frauds or contraventions committed by merchants against the Maritime Customs rules shall be settled hereafter by a separate Agreement, but it is understood in principle that all judicial procedure rests with the German tribunals at Tsingtau.

20. In view of the possibility that with the development of commercial activity at Kiaochou new requirements may arise which are not to be foreseen, it is understood that the present Agreement bears a provisional character, that both parties to it agree to introduce amendments as soon as required for the purpose of remedying inconveniences which may arise in the practical execution of this Agreement.

Signed at Peking, the 17th of April, 1899.

(Signed) HEYKING,
Minister of Germany.
(Signed) ROBERT HART,
Inspector General of Customs

AGREEMENT BETWEEN GREAT BRITAIN AND GERMANY DEFINING THEIR MUTUAL POLICY IN CHINA

SIGNED AT LONDON, 16TH OCTOBER, 1900.

Her Britannic Majesty's Government and the Imperial German Government being desirous to maintain their interests in China and their rights under existing Treaties, have agreed to observe the following principles in regard to their mutual policy in China:

1.—It is a matter of joint and permanent international interest that the ports on the rivers and littoral of China should remain free and open to trade and to every legitimate form of economic activity for the nationals of all countries without distinction; and the two Governments agree on their part to uphold the same for all Chinese territory as far as they can exercise influence.

2.—Her Britannic Majesty's Government and the Imperial German Government will not, on their part, make use of the present complication to obtain for themselves any territorial advantages in Chinese dominions, and will direct their policy towards maintaining undiminished the territorial condition of the Chinese Empire.

3.—In case of another Power making use of the complications in China in order to obtain under any form whatever such territorial advantages, the two Contracting parties reserve to themselves to come to a preliminary understanding as to the eventual steps to be taken for the protection of their own interests in China.

4.—The two Governments will communicate this Agreement to the other Powers interested, and especially to Austria-Hungary, France, Italy, Japan, Russia, and the United States of America, and will invite them to accept the principles recorded in it.

SALISBURY.
HATZFELDT.

DECLARATION BY GREAT BRITAIN RESPECTING WEIHAIWEI

APRIL 19, 1898.

England formally declares to Germany that in establishing herself at Weihaiwei, she has no intention of injuring or contesting the rights and interests of Germany in the Province of Shantung, or of creating difficulties for her in that province. It is especially understood that England will not construct any railroad communication from Weihaiwei and the district leased therewith into the interior of the Province of Shantung.

AMENDMENT TO THE AGREEMENT RE THE ESTABLISHMENT OF A CUSTOM HOUSE IN TSINGTAU

SIGNED AT PEKING, DECEMBER 1, 1905.

Preamble.

The Chinese and German Governments being anxious to amend the Agreement of the 17th April, 1899, with a view to putting the relations between the Colony of Kiaochou and the Chinese Customs on a still better basis, have agreed to the amendments represented in the following Articles.

The basis of this arrangement is that the Chinese Government on its part (1) agrees to pay the German Government a certain proportion of the Import Duties on goods, Opium included, landed in the German territory, and (2) consents to the modifications of Treaty-port Customs practice and principles which said Articles establish; and that the German Government on its part, in consideration of the Chinese payment and consent, undertakes to facilitate the working of the Imperial Chinese Customs establishment established and operating in the German territory and to aid in safeguarding the Revenue legitimately payable.

With the object of carrying out the necessary amendments, the under-mentioned Articles, duly agreed to by both parties, have been made.

Art. 1. After the delimitation of the Tsingtau free area by the German officials the Chinese Maritime Customs established in the German territory will levy all the Duties payable on goods passing outside the free area, and the Chinese Government will hand over annually to the German officials at Tsingtau 20 per cent. of the net Import Duties collected, as shown by the statistics of the Kiaochou Customs, as its contribution to the expenses of the territory. This percentage will be fixed for the present provisionally for five years, and payment will be made in quarterly instalments after the end of each quarter. If this arrangement, fixing the contribution at 20 per cent., should at any time seem to either party to require amendment, notice is to be given to the other before the beginning of the fifth year, in order to afford time for reconsideration.

Art. 2. The limitation of the free area, which is to be established at the Great Harbour, and its probable extension later, on account of the progressing harbour works, will be made as convenient as possible for carrying on Customs work.

Art. 3. On articles which are Duty free by existing Customs Tariff no Duty will be levied.

The following are Duty Free:

FOR THE GERMAN TROOPS.

(a) Articles for arming and outfitting the troops, including Uniforms, if directly ordered by the military or naval authorities and if accompanied by Certificate of the Colonial Government.

(b) Stores and Provisions ordered by the military or naval authorities in anticipation of future requirements, if accompanied by Certificate of the Colonial Government.

FOR THE GENERAL PUBLIC.

(c) Machinery, Plant, as well as Parts of Machinery, Implements and Tools required for manufacturing, industrial, and agricultural purposes; also all Building Materials, Fittings, and other articles for public and official works. A written Bond for the value of the goods must in each case be handed to the Customs certifying that the articles are solely for use in the German territory. If, later, they are to be conveyed into China, they must be declared to the Customs and pay Import Duty. Failure to do so will involve enforcement of the Bond for recovery of double the amount of Duty on the value specified in it.

(d) Articles (Vehicles and such like) passing to and fro between the free area and outside, solely for ordinary repairs; but they are to be reported to the Customs Officers, that their passing may be noted.

(e) All postal parcels imported and destined for private use in the German territory, if the Duty which has to be taxed in accordance with the attached declaration does not exceed $1 (value $20). The Customs are at liberty to examine such parcels and verify declarations as occasion demands.

(f) The personal luggage of passengers, declared as not containing dutiable or contraband goods; it will only be examined in cases where the Customs consider it specially necessary.

Art. 4. The regulations laid down in Arts. 5, 7, and 9 of the Agreement of 17th April, 1899 as to levying of Import Duty are hereby modified, in so far that the free Duty area is limited to the free area. Payment of Duty therefore will be made according to circumstances, either when leaving the free area or, if to be landed elsewhere, before landing. By the payment of the Duty the goods pass into free circulation, and out of Customs control. Provisions having been thus made for effective collection of Duty in Tsingtau, Customs Stations on or near the frontier will, under the provided conditions, be unnecessary, and the question of establishing such can for the time being be postponed; such Stations as are required for the control of junk traffic are excepted.

Art. 5. For manufactories which are erected outside the free area, arrangements are to be made according to which manufactures will not be treated less favourably than if they came from the free area. Labour in the German territory is free of tax; consequently manufactures made in the German territory from raw materials which have been imported from the *hinterland* or by sea into the German territory, are, at reshipment, only subject to such Duty payment as China has by Treaty claim for on the raw material. A list of articles entitled to be treated as raw material will, if needed, be drawn up by the Customs and Colonial authorities and revised annually at the end of each year.

Art. 6. All trading and shipping facilities and privileges which are granted in Chinese Coast ports are to be extended to the German territory, with such modifications as local conditions may require.

Art. 7. In cases of fraud and offences against the Customs regulations, the procedure will be conducted in accordance with the spirit of the "Joint Investigation Rules of 31st May, 1868"—a Colonial officer specially named by the Government to take the place of the Consul.

Art. 8. It is understood that this Agreement is an amendment of the original Agreement of 17th April, 1899, made in accordance with Art. 20 of the latter, which, unless where modified hereby, remains in full force.

Signed and sealed at Peking this first day of December nineteen hundred and five by Baron Mumm von Schwarzenstein, His Imperial German Majesty's Minister, on behalf of the German Government, and by Sir Robert Hart, Bart., G.C.M.G., Inspector General of Imperial Chinese Customs, on behalf of the Chinese Government.

(Seal) (Signed) A. v. Mumm.
(Seal) (Signed) Robert Hart.

THE WEIHAIWEI CONVENTION, 1898.

RATIFICATIONS EXCHANGED IN LONDON, 5TH OCTOBER, 1898.

In order to provide Great Britain with a suitable naval harbour in North China, and for the better protection of British commerce in the neighbouring seas, the Government of His Majesty the Emperor of China agrees to lease to the Government of Her Majesty the Queen of Great Britain and Ireland, Weihaiwei, in the province of Shantung, and the adjacent waters for so long a period as Port Arthur shall remain in the occupation of Russia.

The territory leased shall comprise the island of Kiukung and all other islands in the Bay of Weihaiwei, and a belt of land ten English miles wide along the entire coast line of the Bay of Weihaiwei. Within the above-mentioned territory leased Great Britain shall have sole jurisdiction.

Great Britain shall have, in addition, the right to erect fortifications, station troops, or take any other measures necessary for defensive purposes, at any points on or near the coast of the region east of the meridian 121 degrees 40 min. E. of Greenwich, and to acquire on equitable compensation within that territory such sites as may be necessary for water supply, communications, and hospitals. Within that zone Chinese administration will not be interfered with, but no troops other than Chinese or British shall be allowed therein.

It is also agreed that within the walled city of Weihaiwei Chinese Officials shall continue to exercise jurisdiction, except so far as may be inconsistent with naval and military requirements for the defence of the territory leased.

It is further agreed that Chinese vessels of war, whether neutral or otherwise, shall retain the right to use the waters herein leased to Great Britain.

It is further understood that there will be no expropriation or expulsion of the inhabitants of the territory herein specified, and that if land is required for fortifications, public offices, or any official or public purpose, it shall be bought at a fair price.

This Convention shall come into force on signature. It shall be ratified by the Sovereigns of the two countries, and the ratifications shall be exchanged in London as soon as possible.

It witness whereof the undersigned, duly authorised thereto by their respective Governments, have signed the present agreement.

Claude M. Macdonald.

Prince Ching, Senior Member of the Tsung-li Yamen.

Liao Shou Heng, President of the Board of Punishments.

Done at Peking in quadruplicate (four copies in English and four in Chinese) the first day of July, in the year of our Lord eighteen hundred and ninety-eight, being the thirteenth day of the fifth moon of the twenty-fourth year of Kuang Hsu.

PROVISIONAL CUSTOMS REGULATIONS FOR THE GERMAN TERRITORY OF KIAOCHOU

1. (a) The import of Foreign and Chinese goods and produce into German territory is free, with the exception of Opium, Arms, and Explosives and the materials used in the manufacture thereof, which are subject to special regulations. (Vide paragraphs 2 and 3.)

(b) Foreign goods and Chinese commodities unaccompanied by duty-paid certificates imported from Chinese ports must pay tariff import duty on exportation from German into Chinese territory.

(c) Chinese goods imported from native ports, accompanied by duty paid certificate, must pay coast trade duty on exportation to the Chinese hinterland.

(d) Goods arriving from the interior when exported pay tariff duty.

(e) German territorial produce or goods manufactured from it, if accompanied by an official certificate (Urprungsseugniss) are not liable to export duty upon shipment from Tsingtau.

(f) Goods forwarded to or coming from the interior under transit pass must pay transit dues in addition to the import or export tariff duty.

2. Opium can only be imported in original chests, and must on arrival be reported to the Customs, who will supervise its transportation to the Customs godown.

Upon payment of duty and likin opium may be exported under Customs seal and control from German into Chinese territory.

The importation and consumption of opium in German territory is subject to special regulations. (see below).

3. The importation into German territory of arms and explosives as well as materials used in the manufacture of the same, is subject to special regulations. (see below).

The export of the same from German into Chinese territory is prohibited except under huchau and special regulations after furnishing a sufficient guarantee.

4. The masters of vessels arriving at Tsingtau, (or the agents,) and having on board merchandise destined for the interior of China, will hand to the Customs offices a manifest for such merchandise and customs papers, if coming from a Chinese port. Manifest must be delivered within twenty-four hours.

The manifest must be a correct statement of the aforesaid merchandise, and, if called for, fuller particulars must be supplied for statistical purposes.

Consignees of import cargo are requested to furnish the customs with full particulars as to value, weight, and quantity of their goods for statistical purposes.

5. Goods arriving from Chinese ports under duty paid certificate are subject on importation to Customs inspection, under penalty of loss of coast trade duty privileges.

6. (a) A permit to ship will be issued by the Customs for goods to be exported after they have been examined and have paid the tariff duty. No cargo may be taken on board without such Customs permit or shipping order bearing the Customs seal, under penalty of confiscation.

(b) Duty paid cargo which cannot be received on board ought to be reported to the Customs before being relanded, in order to secure exemption from export duty when subsequently shipped.

(c) When the loading of a vessel is completed, a manifest of her outward cargo must be handed into the Customs by the master or agent. It must contain an account of the marks, numbers, contents, etc., of every package on board. For exhibiting a false manifest the master is liable to a fine not exceeding a hundred dollars.

(d) When a vessel's clearance is applied for, her stamped permit and shipping orders are examined on board; and if they are found in order and the Customs are satisfied of the correctness of the manifest, and that the whole of the export duties have been paid, the Customs clearance is handed to the captain and the vessel is entitled to receive back her papers from the harbour department, and leave the port.

7. The Customs House is open for the receipt and issue of all Customs papers from 10 a.m. to 4 p.m. on all days, Sundays and holidays excepted.

8. In case of confiscation and fines imposed by the Commissioner of Customs, the person has the right of appeal to the official nominated for such duty by the Kiaochou authorities. In such cases the procedure will be conducted in accordance with the spirit of the "Rules for Joint Investigations in Cases of Confiscation and Fine by the Customs House Authorities," Peking, May 31, 1898.

9. Above regulations apply to all merchant vessels and junks.

SPECIAL REGULATIONS FOR THE IMPORTATION AND CONTROL OF OPIUM, ARMS AND EXPLOSIVES AND ARTICLES USED IN THE MANUFACTURE THEREOF.

A.—Import of Opium.

Opium can only be imported in original chests; the importation of smaller cases is forbidden. All opium must on arrival be reported without delay to the Customs, who will supervise its transportation to the Customs godown. The Customs officials are entitled to stop all suspicious goods and to search the ship, in which case the Captain is to render all possible assistance.

B.—Consumption of Opium.

Opium for consumption in German territory must be prepared under the supervision of the Government and the Customs. When prepared, the Opium is packed in tins containing 10, 20, 30 and 40 grammes, and each tin provided with a stamp corresponding to the selling price. It can only be sold by licensed dealers, and a charge will be made for the license.

Arms and explosives, as well as materials used in the manufacture of the same, must at once be declared on arrival, discharged and stored in accordance with harbor regulations.

Powder and other explosives, as well as materials used in their manufacture must be stored in special godowns and cannot be delivered without permit from the harbor department. Storage will be charged for.

Arms must be stored in the Customs godown and cannot be delivered without permit from the Harbor Department. A charge will be made for storage.

SPECIAL AGREEMENT.

1. The Customs agree to place the annual returns as soon as compiled and before they are printed, at the disposal of the Imperial Government, also to afford if possible, statistical information when required.

2. The Customs will collect the duties on opium consumed in German territory, and will remit the same to the Government monthly, after deducting 2½% for cost of collection.

3. The Government agrees to hand over to the Customs, free of charge, land for the necessary official Customs buildings, and such houses which have hitherto served that purpose and may now be required by the Customs.

4. The Customs shall be allowed to exercise Customs control, and to station officers at certain places—yet to be determined—in the German territory (Pacht Gebiet).

ORDINANCE REGULATING PROCEDURE IN CUSTOMS MATTERS IN THE KIAOCHOU TERRITORY

TSINGTAU, DECEMBER 2, 1905.

I.—General Rules.

1. All goods imported by sea into or exported from the German territory, with only such exceptions as are specified below, are subject to Duties on importation or exportation at the rates specified in the Chinese Tariff for Foreign trade for the time being in force. Goods forwarded to or coming from the interior under Transit Pass must pay the Treaty Transit Dues in addition to the Import or Export Tariff Duty.

2. The Customs procedure is guided by the principles and follows the practices which are in force at the Chinese Maritime Custom Houses at the various Treaty ports, and Customs control wherever necessary is exercised by its officers.

3. Import and Export Manifests of all vessels made out in accordance with the provisions of the Treaties must be handed to the Customs. The Manifests to be signed either by the master of the vessel, who in that case is held responsible, or by the agent of the vessel, in which case he will be responsible.

4. Junks repairing to the special points they frequent excepted, no vessel is allowed to work cargo until Import Manifest has been handed in to the Customs, nor to allow it to leave the ship outside the free area until Customs Permit has been issued. Applications for goods to be landed or shipped outside the free area must specify the locality—what jetty, etc.—they are to be landed at or shipped from.

II.—Free Area.

5. The free area comprises the Great Harbour including the Moles, the wharf territory, and the enclosing embarkment, and the territory in front of the harbour as far as the chief railway embarkment. It is limited in the south-west by a line between Inner Harbour and railway embarkment near the junction of Rechternstrasse and Grosse Hafenweg, and in the east by a line between railway and enclosing dam near the block station. An extension of the free area is reserved for later use at any time according to requirement. The following are the boundaries of the area kept for possibly required extension in the future, viz., the railway embarkment to the block station, including territory to be filled in on the one side to the extent of 200 metres east of the enclosing dam; on the other side (west) to the railway viaduct off the Shansistrasse along the road to Oster's Slip, including small and large harbours.

6. The free area shall not be made use of for dwellings, with the exception of those which are necessary for warehouse and wharf controllers, harbour, Customs, and police officers, nor for petty trade, with the temporary exception of a fixed number of Chinese street cookeries for the use of coolies. Factories are, in principle, allowed.

7. The Customs control within the free area, as well as at the exits, is exercised by the Chinese Custom House.

8. The Customs Duty account of all vessels must be settled within ten days of the ship's clearance, and Duty on all Imports passing beyond the free area paid.

9. Goods arriving by sea or from the *hinterland*, which are intended to be stored, sorted, and worked up in the free area, shall be notified to the Customs, who will then take them under supervision. At the time of the notification the following details have to be supplied: mode of conveyance by which the goods arrived, and, if by sea, name of ship, name and address of consignee, date of arrival, number of packages, kind of packing, marks and numbers, and general description of the goods.

10. Goods which are destined to be exported by sea from the free area have to pass the Customs. Goods without Customs papers are not allowed to be received on board.

11. Traffic of every kind (carriages, carts, railway, junks, sampans, tugs, steamers, etc.) by sea and land frontier of the free area is subject to the supervision of the Customs.

III.—Duty-Free Goods.

12. On articles which are Duty free by Treaty no Duty will be levied. The following are Duty free:—

FOR THE GERMAN TROOPS.

(a) Articles for arming and outfitting the troops, including Uniforms, if directly ordered by the military or naval authorities and if accompanied by Certificate of the Government.

(b) Stores and Provisions ordered by the military and naval authorities in anticipation of future requirements, if accompanied by Certificate of the Government.

FOR THE GENERAL PUBLIC.

(c) Machinery, Plant, as well as Parts of Machinery, Implements and Tools required for manufacturing, industrial, and agricultural purposes; also all Building Materials, Fittings, and other articles for public and official works. A written Bond for the value of the goods must in each case be handed to the Customs certifying that the articles are solely for use in the German territory. If, later, they are to be conveyed into China, they must be declared to the Customs and pay Import Duty. Failure to do so will involve enforcement of the Bond for recovery on double the amount of Duty on the value specified in it.

(d) Articles (Vehicles and such like) passing to and fro between the free area and outside, for ordinary repairs; but they are to be reported to the Custom officer, that their passing may be noted.

(e) All postal parcels imported and destined for private use in the German territory, if the Duty, which has to be taxed in accordance with the attached declaration, does not exceed $1 (value $20). The Customs are at liberty to examine such parcels and verify the declarations as occasion demands.

13. The personal luggage of passengers, declared as not containing either dutiable or contraband goods, is passed free of Duty and, as a rule, without examination; but the right of examination is reserved to the Customs in cases where it may be considered specially necessary.

Duty is leviable on articles carried in excess of those reasonably necessary for personal use or if expected to be sold.

IV.—Manufactures in the German Territory.

14. Manufactures in the German territory are only subject to Duty in so far as China is entitled to Duty on the raw material.

(a) Chinese raw material landed in German Territory from the *hinterland* or non-Treaty ports and intended for use in a manufactory may be declared to the Customs and a Bond for any Duty payable on same deposited.

When the articles manufactured from this raw material come to be exported, they will pay Export Duty on the material used, and the Duty guaranteed by the Bond shall be cancelled to that extent.

Duty guaranteed by the Bond must be paid or accounted for before the expiration of three years from its date.

It will be optional for the exporter to pay full Tariff Duty on the exported article instead of on the raw material used in its manufacture.

(b) Any Import or Coast Trade Duty levied on raw material arriving from Foreign countries or from the Treaty ports of China will be refunded at the time of exportation by sea of the manufactured articles made therefrom, provided that at the time of importation such material was duly declared at the Customs House as for use in a manufactory.

(c) An arrangement will be made by agreement of Colonial and Custom authorities that when the various classes of manufactured articles are exported, the amount of raw material used will be fixed as a definite proportion and the Export Duty will be diminished accordingly.

(d) The factories entitled to claim the treatment as specified above will be registered, and a list of them, revised as required and if needed, furnished to the Customs.

V.—Opium.

15. Opium can only be imported by vessels in original chests. The importation of smaller quantities than one chest is forbidden. All opium on board of ships, including that intended for consumption during the journey, must, on arrival of the ship, be reported without delay to the Customs, who will supervise the transportation to the Customs godown of so much as is to be landed.

16. Opium from the German territory to China or from China to the German territory can only be conveyed by rail, on special Bill of Lading and as "Eilgut." It is forbidden to carry it as passenger's luggage. All Bills of Lading, etc., for arriving Opium are handed by the railway to the Customs in the German territory, who will notify the addressees.

17. The consumption of Opium in the German territory is subject to special regulations.

VI.—Arms, Powder, Explosives, etc.

18. Arms, Powder, Explosives, and the like, as well as materials used in the manufacture of the same, must be declared on arrival and discharged and stored in accordance with the regulations of the Colonial Government.

19. The export of Arms and Munitions of War of all kinds, as well as materials used in the manufacture of the same, from the German into Chinese territory is prohibited; exception is only made in the case of articles covered by Special Permit issued by the Commissioner of Customs in accordance with Chinese regulations.

20. The storage of Arms and Explosives in the German territory, as well as the trade in the same, is subject to special regulations.

VII.—Mail Matter.

21. Mail matter may be landed or shipped by the Post Office at any time.

22. Postal parcels will be received by the Post Office only if accompanied by a declaration form viséd by the Customs.

23. Parcels destined for Tsingtau will be handed, immediately after arrival, by the Post Office to the Customs for assessment of Duty. The declaration form will be delivered to the addressee in the same way as other mail matter. The addressee will produce the declaration form at the Customs, and on payment of Duty, if any (vide 12. (e)), the parcel will be delivered by the Customs. For such parcels as are destined for other places in the German territory where German Post Offices operate, the Duty payment of such parcels will be made, on application of the addressee, by the German Post Office, who will collect the Duty and a fee of 20 cents at the time of delivering the parcel.

24. The importation of Opium, Arms, Powder, Explosives and the like, as well as materials used in the manufacture of the same, by Post is forbidden. In special cases the Government can grant an exception.

VIII.—Tank Kerosene Oil.

25. The Customs procedure for despatching tank ships, storage and valuation of Kerosene Oil will be in accordance with the procedure in force at the Maritime Custom Houses at the Treaty ports.

IX.—Office Hours of the Custom House.

26. The Custom House is open for the receipt and issue of all Customs papers from 10 a.m. to 4 p.m. on all days, Sundays and holidays excepted. The Customs Bank is open on all week days from 9-12 a.m. and 2-4 p.m.

27. Vessels wishing to load or discharge on Sundays or holidays, as well as during night hours, must take out a Special Permit from the Customs; this Permit must be applied for during office hours.

28. The transport of goods over land and sea boundary of the free area during night hours is only allowed in case a Special Permit has been obtained from the Customs. This does not apply to mail matter and passengers' luggage.

29. Night hours are:—

From 1st March to 1st October; from 8 p.m. to 5 a.m.

From 1st November to 28/29 February; from 6 p.m. to 6 a.m.

X.—Fines.

30. Confiscation and fines will be imposed according to the principles which are laid down by the Treaties and which are in force at the Maritime Customs Houses. In cases of appeal against confiscation and fine imposed by the Commissioner of Customs, the procedure will be conducted in accordance with the spirit of the "Rules for Joint Investigation in Cases of Confiscation and Fine by the Custom House Authorities. Peking. 31st May, 1898."

XI.—Abrogation of Former Regulations.

31. This Ordinance, issued to carry out the terms of the Agreement made on 17th April, 1899 and of the Amendment to same made under its 20th paragraph on the 1st December, 1905, and accepted by the Chinese Custom authorities, will come into force on 1st January, 1906, and will take the place of the following Regulations, which are hereby rescinded:—

(a) The Provisional Customs Regulations for the German Territory of Kiaochou, of 23rd May, 1899.

(b) The Special Regulations for the Importation and Control of Opium, etc., of 23rd May, 1899.

(c) The Special Regulations re the Execution of the Customs Control, of 23rd May, 1899.

(d) The Provisional Additional Regulation to the Provisional Customs Regulations concerning Goods loaded by the Shantung Railway, of 20th April, 1901.

(e) The Customs Notification No. 24 regarding the Goods loaded by the Railway, of 31st March, 1902.

Tsingtau, *2nd December, 1905.*

The Colonial Governor p.t.,

(Signed) Van SEMMERN.

THE OPEN DOOR DECLARATION

MR. HAY, AMERICAN SECRETARY OF STATE, TO MR. WHITE, AMERICAN AMBASSADOR TO GERMANY.

Department of State,

Washington, September 6, 1899.

Sir: At the time when the Government of the United States was nformed by that of Germany that it had leased from His Majesty the Emperor of China the port of Kiaochou and the adjacent territory in the province of Shantung, assurances were given to the Ambassador of the United States at Berlin by the Imperial German Minister for Foreign Affairs that the rights and privileges insured by treaties with China to citizens of the United States would not thereby suffer or be in anywise impaired within the area over which Germany had thus obtained control.

More recently, however, the British Government recognized by a formal agreement with Germany the exclusive right of the latter country to enjoy in said leased area and the contiguous "sphere of influence or interest" certain privileges, more especially those relating to railroads and mining enterprises; but, as the exact nature and extent of the rights thus recognized have not been clearly defined, it is possible that serious conflicts of interests may at any time arise, not only between British and German subjects within said area, but that the interests of our citizens may also be jeopardized thereby.

Earnestly desirous to remove any cause of irritation and to insure at the same time to the commerce of all nations in China the undoubted benefits which should accrue from a formal recognition by the various Powers claiming "spheres of interest" that they shall enjoy perfect equality of treatment for their commerce and navigation within such "spheres," the Government of the United States would be pleased to see His German Majesty's Government give formal assurances, and lend its co-operation in securing like assurances from the other interested Powers, that each within its respective sphere of whatever influence—

First. Will in no way interfere with any treaty port or any vested interest within any so-called "sphere of interest" or leased territory it may have in China.

Second. That the Chinese treaty tariff of the time being shall apply to all merchandise landed or shipped to all such ports as are within said "sphere of interest" (unless they be "free ports"), no matter to what nationality it may belong, and that duties so leviable shall be collected by the Chinese Government.

Third. That it will levy no higher harbor dues on vessels of another nationality frequenting any port in such "sphere" than shall be levied on vessels of its own nationality, and no higher railroad charges over lines built, controlled, or operated within its "sphere" on merchandise belonging to citizens or subjects of other nationalities transported through such "sphere" than shall be levied on similar merchandise belonging to its own nationals transported over equal distances.

The liberal policy pursued by His Imperial German Majesty in declaring Kiaochou a free port and in aiding the Chinese Government in the establishment there of a custom-house are so clearly in line with the proposition which this Government is anxious to see recognized that it entertains the strongest hope that Germany will give its acceptance and hearty support.

The recent Ukase of His Majesty the Emperor of Russia declaring the port of Ta-lien-wan open during the whole of the lease under which it is held from China to the merchant ships of all nations, coupled with the categorical assurances made to this Government by His Imperial Majesty's representative at this capital at the time, and since repeated to me by the present Russian Ambassador, seem to insure the support of the Emperor to the proposed measure. Our Ambassador at the Court of St. Petersburg has in consequence been instructed to submit it to the Russian Government and to request their early consideration of it. A copy of my instruction on the subject to Mr. Tower is herewith enclosed for your confidential information.

The commercial interests of Great Britain and Japan will be so clearly served by the desired declaration of intentions, and the views of the Governments of these countries as to the desirability of the adoption of measures insuring the benefits of equality of treatment of all foreign trade throughout China are so similar to those entertained by the United States, that their acceptance of the proposition herein outlined and their co-operation in advocating their adoption by the other Powers can be confidently expected. I enclose herewith copy of the instruction which I have sent to Mr. Choate on the subject.

In view of the present favorable conditions, you are instructed to submit the above considerations to His Imperial German Majesty's Minister for Foreign Affairs, and to request his early consideration of the subject.

Copy of this instruction is sent to our Ambassadors at London and at St. Petersburg for their information.

I have, etc.

JOHN HAY.

COUNT VON BULOW, HIS IMPERIAL GERMAN MAJESTY'S MINISTER FOR FOREIGN AFFAIRS, TO MR. WHITE.

(TRANSLATION.)

Foreign Office,

Berlin, February 19, 1900.

Mr. Ambassador: Your Excellency informed me, in a memorandum presented on the 24th of last month, that the Government of the United States of America had received satisfactory written replies from all the Powers to which an inquiry had been addressed similar to that contained in Your Excellency's note of September 26 last, in regard to the policy of the open door in China. While referring to this, Your Excellency thereupon expressed the wish that the Imperial Government would now also give its answer in writing.

Gladly complying with this wish, I have the honour to inform Your Excellency, repeating the statements already made verbally, as follows: As recognized by the Government of the United States of America, according to Your Excellency's note referred to above, the Imperia Government has, from the beginning, not only asserted, but also practically carried out to the fullest extent, in its Chinese possessions absolute equality of treatment of all nations with regard to trade, navigation, and commerce. The Imperial Government entertains no thought of departing in the future from this principle, which at once excludes any prejudicial or disadvantageous commercial treatment of the citizens of the United States of America, so long as it is not forced to do so, on account of considerations of reciprocity, by a divergence from it by other governments. If, therefore, the other Powers interested in the industrial development of the Chinese Empire are willing to recognize the same principles, this can only be desired by the Imperial Government, which in this case upon being requested will gladly be ready to participate with the United States of America and the other Powers in an agreement made upon these lines, by which the same rights are reciprocally secured.

I avail myself, etc.

BULOW.

THE TIENTSIN-PUKOW RAILWAY AGREEMENTS

THE PRELIMINARY AGREEMENT

TIENTSIN-CHINKIANG (NOW PUKOW) RAILWAY; RATIFIED MAY 24TH, 1899.

This Preliminary Agreement relating to the construction of railways between Tientsin and Chinkiang, is made between their Excellencies Hsu and Chang; duty authorized to act on behalf of the Imperial Government of China, hereinafter called "the Imperial Directors" of the one part; and (*a*) the Deutsche-Asiatische-Bank; (*b*) the Hongkong and Shanghai Banking Corporation for themselves and on behalf of Messrs. Jardine, Matheson & Co., as joint agents for the British and Chinese Corporation Limited, hereinafter called "the Syndicate" of the other part.

1. The Imperial Government of China authorizes the Syndicate to issue an Imperial Government 5 per cent. gold loan for an amount of about £7,400,000, this amount being subject to modification later after the completion of survey.

2. The loan is designed to provide the capital for the constrution of Government railway lines from a point at or near Tientsin, through Titchow and Tsianfu to Thsien near the southern frontier of Shantung, hereinafter known as the northern part of the Tientsin-Chinkiang Railway lines, and from Thsien to Kuachao (Chinkiang) on the Yangtze Kiang, hereinafter known as the southern part of the Tientsin-Chinkiang Railway lines, the total length of these lines being about 982 kilom., equal to about 1,800 Chinese li.

3. The capital so provided will include the funds required for rolling-stock and other equipment, and for working the lines, together with interest on the loan during the period of construction, which is estimated to occupy about five years from the date of the loan, but which will finally be fixed after survey.

4. The rate of interest for the loan shall be 5 per cent. per annum on the nominal principal, and shall be paid during the time to be fixed for the construction out of the proceeds of the loan, and afterwards out of the revenue of the lines named, in half-yearly instalments, according to the amounts and dates of a schedule which will be attached to the Final Agreement.

5. The term of the loan shall be fifty years Repayment of principal shall commence in the eleventh year from the date of the loan, and shall be made by a yearly sinking fund in shares to be determined in the Final Agreement to the Deutsche-Asiatische Bank, and the Hongkong and Shanghai Banking Corporation in yearly instalments out of the revenue of the lines according to the amounts and dates of the schedule to be attached to the Final Agreement.

6. In the event of the Imperial Government of China wishing to redeem, after the lapse of thirty years from the date of the loan, the outstanding amount of the loan, or any portion of it not yet due, from funds *bona fide* belonging to the Chinese Government or subscribed by Chinese merchants, the conditions for such redemption must first be arranged with the Syndicate when the time arrives.

7. The yearly payments due for amortization and the half-yearly payments due for interest, except as otherwise provided in Clause 4, shall be made in accordance with the amounts and dates of a schedule to be attached to the Final Agreement, in shares to be determined by the Final Agreement, out of the joint net revenues of the railway lines to the Deutsche-Asiatische Bank and the Hongkong and Shanghai Banking Corporation by the Boards of Commissioners hereinafter mentioned, who shall hand to those banks, at their branches in Shanghai, twenty-one days before the due date named in the schedule, funds in Shanghai sycee sufficient to meet such payment in sterling in Europe, the rate of exchange for which shall be settled with those two banks on the same day on a fair basis.

In reimbursement of expense connected with the service of interest and principal of the loan, the two banks will receive a commission of ¼ per cent. on the annual loan service.

8. The Imperial Government of China hereby engages that the interest and principal of this loan shall duly be paid in full, and should the revenues of the railways not be sufficient to provide for the due and full payment of interest and repayment of principal of this loan the Imperial Directors must memorialize the Throne, and the Imperial Government of China will then make arrangements to ensure that the amount of deficiency shall be met from other sources and handed over to the banks twenty-one days before the due date of the funds required to complete full payment of interest and repayment of principal.

This clause to be open to reconsideration in the Final Agreement.

9. This entire loan shall be secured by a first mortgage on the permanent way, rolling-stock, and entire property, together with the revenue of the lines named in Clause 2. No further loan, charge, or mortgage shall be charged on this security, except with the written consent of the two banks, until the present loan is returned. In the event of default in payment of interest or repayment of principal of this loan on due date the railway lines and property so mortgaged shall be handed over to the Syndicate, to be dealt with in such a manner as may be legal and necessary for the full and effective protection of the bondholders. When the loan is completely redeemed, Clause 29 of this Agreement shall take effect.

10. The Syndicate will be authorized to issue to the subscribers to the loan, bonds for the total amount of the loan in pounds sterling in such form, in such languages, and for such amounts as shall appear advisable to the Syndicate, and these bonds shall be sealed in China by the Imperial Directors and in Europe by the Minister for China, in Berlin or London, as evidence that the Imperial Government of China is bound thereby as debtor of the loan. Provision will be made in the Final Agreement for the case of bonds lost, stolen, or destroyed.

11. All bonds and coupons and payments made and received in connection with the service of this loan shall be exempt from all Chinese taxes and imports for ever.

12. All details necessary for the prospectus and connected with the service of the interest and repayment of the principal of this loan, not explicitly provided for by the Final Agreement, shall be left to the arrangement of the Syndicate, who will be authorized to issue a prospectus of the loan as soon as possible after the signing of the Final Agreement.

The Imperial Government of China will instruct the Chinese Ministers in Berlin and London to co-operate with the representatives of the Syndicate in any matters requiring conjoint action, and the Chinese Minister in Berlin will sign the prospectus of the loan as required by the Rules of the Berlin Stock Exchange.

13. The loan shall be floated in one or more series at the discretion of the Syndicate, due regard being had to the interest of China; but the floating of the loan shall not be delayed more than necessary, subscriptions being invited by the Syndicate in Europe and in China from both European and Chinese on equal conditions.

14. The price of the loan shall be 90 per cent net on the nominal principal to the Chinese Government. The proceeds of the loan shall be paid to the credit of a Tientsin-Chinkiang Imperial Government Railway account with the Hongkong and Shanghai Banking Corporation, London. The payment into the credit of these accounts shall be made in such instalments and on such dates as the conditions allowed to the subscribers to the loan shall admit.

Interest at a rate to be arranged from time to time shall be granted on the credit balance of the railway accounts.

After deduction of the funds required for the service of interest and for commission on this service during the time of construction, the Deutsche-Asiatische Bank will hold the proceeds with accrued interest to the order of the Board of Commissioners appointed for the northern part of the Tientsin-Chinkiang Railway lines, and the Hongkong and Shanghai Banking Corporation will hold the proceeds with accrued interest to the order of the Board of Commissioners appointed for the southern part of the Tientsin-Chinkiang Railway lines. The Commissioners, in drawing the sums necessary for the construction, shall give notice to the banks fourteen days before the day on which they are required.

15. If during the time of construction the whole amount of the instalments with accrued interest to be paid by the Syndicate should, after deduction of the sums necessary for the service of interest on the loan, not be sufficient for the construction of the railway lines, the amount of deficiency shall be provided by a supplementary loan to be issued by the Syndicate, the interest and other conditions of which are to be the same as in this Agreement, but the price must be arranged when the time arrives.

If after the completion of the lines there should be a balance at credit of the Tientsin Chinkiang Railway account, the Syndicate shall transfer such unused balance to the credit of the loan service reserve fund, hereinafter mentioned as a provision for payments to which the Government is bound by Clause 8 of this Agreement.

16. If before the publication to the prospectus for the issue of loan any political or financial crisis should take in Europe or elsewhere, by which the markets and the prices of existing Chinese Government stocks are so affected as to render the successful issue of the loan impossible on the terms herein named, the Syndicate shall be granted such extension of time for the performance of their contract as the circumstances demand, or shall have the right to withdraw from their contract with the Chinese Imperial Government which shall in that case become null and void.

17. The Deutsche-Asiatische Bank on the one side, and the Hongkong and Shanghai Banking Corporation for themselves, and on behalf of Messrs. Jardine, Matheson & Co., as joint agents for the British and Chinese Corporation Limited, on the other side, shall take the loan in shares to be agreed upon by the Syndicate, and without responsibility for each other.

18. The northern part of the railway lines shall be constructed, equipped, and worked on behalf of the Imperial Chinese Government by

Deutsche-Asiatische Bank, and the southern part of the railway lines shall be constructed, equipped, and worked on behalf of the Imperial Chinese Government by the British and Chinese Corporation Limited, under conditions as follows:—For each of these parts a Board of Commissioners shall be appointed to superintend the construction, equipment, and working of the railway lines in accordance with regulations to be arranged between the Imperial Directors and the Deutsche-Asiatishe Bank and the British and Chinese Corporation Limited.

19. An office shall be provided for the Imperial Directorate, and a head office shall be established for each Board of Commissioners. The Board of Commissioners for the northern and southern parts of the lines respectively, appointed to superintend the construction and administration, shall each consist of five members, two Chinese managers representing the Imperial Directors and nominated by them, and three European members, namely, a representative of the Bank concerned, the manager and the Chief Engineer, to be nominated by the Deutsche-Asiatische Bank, and the British and Chinese Corporation Limited.

In case any foreign or Chinese members of the Boards of Commissioners do not work well together, it shall be open to the Imperial Directors, the Deutsche-Asiatische Bank, and the British and Chinese Corporation Limited, to mutually discuss means to arrange and deal with the matter.

The foreign and Chinese railway staff, including a Ti-tiao, shall be appointed by the Boards of Commissioners, who will report the appointment to the Imperial Directors. In the event of an important appointment the two Chinese members of the Boards may first consult the Imperial Directors.

The principal members of the railway staff shall be, capable and experienced Europeans, but Chinese with sufficient experience in engineering or traffic may also be appointed.

Foreign and Chinese members of the railway staff shall, in the event of incapacity or misconduct, be dismissed by the Boards of Commissioners who will inform the Imperial Directors of the same.

The salaries of the five members of each Board of Commissioners and of the foreign and Chinese railway staff shall be arranged by the Deutsche-Asiatische Bank, the British and Chinese Corporation Limited, and the Imperial Directors, and paid by the head office of their respective sections.

20. The plans, estimates, and all matters relating to survey must be submitted for approbation to the Board of Commissioners. The Chief Engineer shall indicate to the Chinese Commissioners the land which it is necessary to purchase, and which must be sufficient for the construction of a permanent way with double lines and dependencies, and the Chinese Commissioners shall thereupon effect such purchases at a price to be based on a scale to be arranged after survey. In the event of the route proposed by the Chief Engineer passing through towns, villages, graveyards, or other points where much obstruction is encountered, the Chief Engineer will, together with the Board of Commissioners, consider means of diverting the proposed railway route in order to avoid difficulties.

21. After completion of the survey and due inquiry as to the prevailing provincial likin and customs dues, the Imperial Directors will arrage with the Deutsche-Asiatische Bank and the Britith and Chinese Corporation Limited, regulations for the payment of likin and duty upon merchandise and live stock in transit over the railway lines.

22. All materials necessary for the construction and working of the lines, obtained either from foreign countries or from other provinces of China, and the revenues derived from the railway, shall be exempt from duty of taxation of all kinds, and the Imperial Government of China will instruct the customs and likin authorities accordingly.

All material, plant, and goods shall be ordered from the Deutsche-Asiatische Bank and the British and Chinese Corporation Limited, on conditions to be arranged in the Final Agreement.

The plans, estimates, and requisitions for material shall be submitted to the Board of Commissioners by the Chief Engineer for reference at their discretion to the Imperial Directors, and the same shall be furnished by the Deutsche-Asiatische Bank and the British and Chinese Corporation on the best possible terms.

Due consideration will be extended to materials from the Hanyang Iron Works, if available when required, and of a quality satisfactory to the Chief Engineers of the Syndicate.

23. The Deutsche-Asiatische Bank and the British and Chinese Corporation Limited shall, during the working of the lines, maintain the railways, buildings, works, rolling-stock and dependencies in good order and condition.

24. Branch lines or extension in connection with the Tientsin-Chinkiang Railway lines that may appear profitable or necessary later on shall be the subject of negotiations between the Imperial Directors and the Syndicate.

25. The tariff to be introduced by the European Manager shall be approved by the Boards of Commissioners, who will take into consideration the tariffs of other existing railway lines in China, while keeping in view the necessity for attracting traffic. The European Manager may also be instructed to enter into arrangements for tariffs on through traffic connecting lines. In case of war, foreign or internal, the railway lines shall be reserved in the first instance for the transport of Chinese troops, commissariat, and munitions ot war under the order of Imperial Directors, and at half the ordinary tariff rates, and the railways shall not engage in any service injurious to China. In case of famine, grain will also be transported over the lines at half the ordinary tariff rate, under orders of the Imperial Directors.

26. All payments made and received in connection with the railway lines will be subject to the control of the Boards of Commissioners, and after the line is working estimates of receipts and expenditure shall be similarly submitted to the Boards. Regular accounts shall be furnished through the Imperial Directors to the Railway and Mining Bureau of the Tsung-li Yamen and the Board of Revenue, Peking. All payments made must be represented by Chinese or foreign vouchers as the case may be.

27. The profits from working completed sections of the railways during the time of construction shall be credited to railway construction account.

28. Should any traffic business be apparent later on as likely to benefit the Imperial Government of China and increase the earning power of the railway lines, the Deutsche-Asiatische Bank and the British and Chinese Corporation Limited shall represent the same to the Imperial Directors, and request them to obtain the necessary authority to arrange the business.

29. The Deutsche-Asiatische Bank and the British and Chinese Corporation Limited shall work the lines on behalf of the Imperial Government of China until the present loan is redeemed. As soon as the loan has been completely redeemed this Agreement shall become null and void, and the railway lines and property named in this Agreement shall be handed over to the absolute disposal of the Chinese Government.

30. The annual net revenue is understood to be that resulting from the gross receipts of the passengers and goods traffic and the income from other sources, after deducting all working expenses, including maintenance of the permanent way, repairs and renovation of machinery and rolling-stock, and all expenses of administration, besides deducting an amount to be determined by the Deutsche-Asiatische Bank and the British and Chinese Corporation Limited as sufficient for accumulating a reserve fund for extraordinary improvements or repairs. Of the surplus of the joint net annual revenue of the northern and southern railway lines, after payments of interest and repayment of principal of the loan, first, a participation of 20 per cent. will be granted to the Syndicate in remuneration for their management of the construction and the working of the railway lines; secondly, an amount equal to 10 per cent. of the gross earnings will be transferred to a loan service reserve fund, deposited with the two banks, and the remainder will be at the disposal of the Imperial Government of China. An account of the said loan service fund will be rendered yearly to the Railway and Mining Bureau of the Tsung-li Yamen and to the Board of Revenue, and the fund will be drawn upon only in the case of the revenue of the railway line being insufficient to meet the service of interest and principal of the loan. On redemption of the loan being completed the balance of this fund will revert to the Chinese Government.

31. The powers and authority given and delegated to the Imperial Directors by the Imperial Government of China shall, in the case of their promotion or removal, be transferred to their successors, and the Deutsche-Asiatische Banks and the Hongkong and Shanghai Banking Corporation, Messrs. Jardine, Matheson & Co., and the British and Chinese Corporation Limited, may, subject to all their obligations, transfer or delegate all or any of their rights, powers, and discretions to any German of English Company, director, or agents, with or without power of further transfer and sub-delegation.

32. Differences arising between the Imperial Directors and the Syndicate will be taken up and decided with equity and justice by the Tsung-li Yamen on the one side, and the Minister for Germany and the Minister for Great Britain in China on the other side.

33. As soon as possible after the signature of this Agreement the Engineers of the Syndicate will be authorized by the Imperial Chinese Government to survey and report upon the proposed railway lines, when subject to such report being satisfactory to the Syndicate, this Preliminary Agreement will be ratified by the Syndicate and replaced by a Final Agreement containing all necessary details. Modifications in the conditions of this Preliminary Agreement may be made, subject to the consent of both parties.

34. The provisions of this Preliminary Agreement shall, immediately after signature, be ratified by an Imperial Edict (*) which shall be communicated by the Tsung-li Yamen to the Ministers for Germany and Great Britain in Peking.

35. Five sets of this Agreement are executed in English and Chinese, one set to be retained by the Tsung-li Yamen, one by the Railway and Mining Bureau, and one by each Contracting Party.

In the event of any doubt arising regarding the interpretation of the Contract, the English text shall rule.

(*) The Edict was issued on the 24th May, 1899 vide Blue Book. China, No. 1 of 1900, p. 190.

THE FINAL TIENTSIN-PUKOW RAILWAY LOAN AGREEMENT

JANUARY 13, 1908

The following is a translation of the Agreement between the British and Chinese Corporation Ltd. and the Wai Wu Pu signed in Peking on Jan. 13, 1908, or the tenth day, twelfth moon, thirty-third year of Kwang Hsu:—

1.—The Chinese Government hereby sanctions the German and British Banks Syndicate issuing a loan for five million sterling, £5,000,000, at 5% which shall be styled the "Chinese Government five per cent Tientsin-Pukow railway loan."

2.—This loan is to furnish the capital wherewith to construct a Government railway from the vicinity of Tientsin to connect the existing Peking-Shanhaikwan line via Techow, Chinanfu to Ihsien along the southern boundary of Shantung, and this line will hereafter be known as the northern section of the Tsin-Pu or Tientsin-Pukow line; and from Ihsien to Pukow on the bank of the Yangtze opposite Nanking which shall hereafter be known as the southern section of the Tsin-Pu railway. The total distance of the two sections is 1085 kilometers or equal to 2,170 Chinese li. The survey of the line will be subject to revision by the Director General.

3.—The capital will be used for the construction of the line, the purchase of the land and rolling stock, and to meet the current working expenses of the line when in operation, also the payment of the interest on the loan while the line is being constructed. The period of construction calculating from the date of commencement is estimated as four years, such commencement to take place within six months of the signing of the agreement, and within this period the syndicate shall place £500,000 at the disposal of the Director General, the money to be drawn by him either in China or from Europe as a first instalment of the loan. The whole or part of this £500,000 shall be deducted with interest from the proceeds of the first sale of the bonds and bear interest not exceeding 6%.

4.—The interest of the loan, which is 5%, shall be payable from the date of issue of the loan and during the time of construction, payable half-yearly. It will be paid by the Chinese Government either from the proceeds of the loan or from other sources as considered advisable.

5.—The loan is made for a term of 30 years, the repayment to commence at the end of ten years, and with the exceptions noted in Art. 6 of this agreement the amortisation to the banks concerned, Deutsch Asiatische Bank, and Hongkong and Shanghai Corporation, Ltd., shall be made in half-yearly instalments out of the revenue of the line or from such other source as the Chinese Government may decide, payment being made in all cases 14 days previous to the date due calculated from the date of issue.

6.—After the expiration of ten years the Chinese Government may if it so desire redeem the outstanding amount of the loan or any part of it any time before the twentieth year on the payment of a premium of 2½%, or £102 10s. on every £100 bond. After the twentieth year redemption can be made without premium, but in any case six months' notice must be given by the Chinese Government, and the method of redemption shall be by the drawing of additional bonds at each ordinary drawing.

7.—The Deutsch Asiatische Bank and the Hongkong and Shanghai Banking Corporation having been appointed representatives for the loan by the British and German companies to receive the half-yearly payments due for amortisation and interest, referred to in Articles 4 and 5, they shall be made, in accordance with the amounts and dates attached to this agreement by the Director General of the Railway, in Shanghai or in Tientsin, in Shanghai or Tientsin Sycee sufficient to meet such payments in gold in Europe, exchange for which shall be settled with the said Banks on the same day. The railway administration may arrange exchange within six months previous to any due date for the repayment of interest and principal. Payment can be made in gold if the Chinese Government have gold funds in Europe, not remitted from China for the purpose, and desire so to use them.

The Hongkong and Shanghai Banking Corporation and Deutsch Asiatische Bank will receive a commission of one quarter per cent for their expenses as Agents.

8.—The Imperial Government of China engages that the interest and principal of this loan shall duly be paid in full, and if the revenue of the Railway or the proceeds of the loan do not suffice for full payment, the Director General shall memorialise the Throne on the amount of deficiency and make payment to the Banks on the date upon which funds are required.

9.—The loan is secured in the following manner:—

1. By likin and internal revenues of the province of Chihli, 1,200,000 Haikuan Taels a year:

2. By likin and internal revenues of the province of Shantung 1,600,000 Haikuan Taels a year, and

3. By the revenue of the Nanking Likin Collectorate 900,000 Haikuan Taels a year and of the Huai-an Native Customs 100,000 Haikuan Taels a year in the province of Kiangsu.

The provincial revenues as above are declared free from all other loans, charges or mortgages.

So long as principal and interest of the loan are regularly paid, there shall be no interference with these provincial revenues. If principal or interest of the loan be in default at due date, then, after a reasonable postponement internal revenues of the three provinces sufficient to provide the amounts above stated shall forthwith be transferred to, and be administered by, the Imperial Maritime Customs, in the interest of the bondholders. And so long as this loan or any part thereof shall remain unredeemed, it shall have first claim over all future loans, on the above mentioned revenues of the three provinces. It is understood and agreed that so long as this loan is unredeemed the Railway shall under no circumstances be mortgaged nor its earnings given as security to any other object.

Should the Government decide to revise the Customs tariff with the view of abolishing likin, this agreement will not oppose such revision except that the likin required as security for the loan must not be decreased or abolished without previous arrangement with the Syndicate and after other source of revenue has been guaranteed.

10.—The Syndicate is authorized to issue bonds for the total amount of the loan and the form of the bonds shall be arranged in consultation with the Director General or the Chinese Ministers in London and Berlin. The bonds shall be printed in Chinese and English or Chinese and German and be signed by stamp of the Director General and his seal, the Chinese Minister in London or Berlin shall also put his seal upon each bond with his signature, as a proof that the sale of the bonds is authorized by, and is binding upon the Chinese Government. The representatives of the Syndicate in London and Berlin shall countersign the bonds as agents.

In the event of bonds being lost, or destroyed, the Syndicate shall notify the Director General and the Chinese Minister in London and Berlin, who shall authorize the Syndicate to insert an advertisement in the public newspapers notifying that payment of the same has been stopped according to the customs of the country concerned, and if the bonds are not recovered, the Director General, or the Chinese Minister in London or Berlin, shall issue duplicate bonds.

11.—All bonds and payments made and received in connection with the service of this loan shall be exempt from all Chinese taxes and imposts during the currency of this loan.

12.—The Syndicate is authorized to issue the regulations of the loan as soon as possible after the signing of this agreement, and the Chinese Government will instruct the Chinese Ministers in London and Berlin to assist the Syndicate in any matters connected therewith and to sign the regulations of the loan.

13.—The loan will be issued in two or more instalments of bonds, the first issue of £3,000,000, as soon as possible after the signing of this agreement and not later than twelve months from the date. The price to the Imperial Chinese Government of the first instalment shall be ninety-three per cent of the face value. Further issues shall be effected in time to prevent aay delay of the work of construction, in amounts to be determined by the Director General, and the price payable to the Chinese Government in respect of these series shall be the same rate as to the public, less charges of 5½ points by the Syndicate. Subscriptions will be invited by the Syndicate in Europe and in China both from Chinese and Europeans on equal conditions, preference being given to the application of the Chinese Government if application is made before the issue of the regulations.

14.—The income of the loan shall be paid to the account of Tientsin-Pukow Government Railway with the Hongkong and Shanghai Banking Corporation and the Deutsch Asiatische Bank in China, London or Berlin, as the case may be. Interest at the rate of 4% shall be granted on the portion of this account kept in London and Berlin, and interest on the portion kept in China will be allowed at the Banks' rates for current account or fixed deposits, as may be arranged. In addition to interest and commission the Banks will hold the funds for the Director General, who shall not draw more than £20,000 without giving the Banks ten days' notice. Expenditure of funds shall be in amounts to suit the progress of construction of the railway by orders on the Hongkong and Shanghai Banking Corporation and the Deutsch Asiatische Bank respectively, signed by the Managing Director of the Railway or, in his absence, by his representative, and accompanied by his certificates stating the nature and cost of the work to be paid for.

Such amounts as may be required in China may at any time be transferred by the Managing Director, at his discretion, to Shanghai, the transfers being effected through the Hongkong and Shanghai Banking Corporation and the Deutsch Asiatische Bank respectively, and the transferred funds shall remain on deposit with those Banks until required for Railway purposes.

The accounts of the Railway will be kept in Chinese and English in accordance with modern methods, and will be supported by all necessary vouchers. During the period of construction the accounts will be open at any time to an inspector appointed and paid by the Syndicate. His duty will be to certify the due expenditure of the funds in accordance with the provisions of Article 3 of this Agreement. The Railway Administration will publish annually at the end of the financial year a report in Chinese and English of the working accounts and receipts of the railway, which report may be purchased by the public on application.

15.—If during the time of construction the proceeds of the present loan should not be sufficient to complete the construction and equipment of the line, the deficiency shall be provided, in the first place, from such

Chinese funds as may be available so as to permit continuance of the work, any balance then uncovered being supplemented by a further foreign loan for the amount required, to be issued by the Syndicate. The interest and other conditions of such supplementary loan will be the same as in the present agreement. If after the completion of the line there should be a balance at credit of the railway account, such unused balance will be transferred to the credit of the interest reserve fund mentioned in Article 21 as a provision for payments for which the Imperial Chinese Government is responsible under this agreement.

16.—If, before the first sale of the bonds, any political or financial event should take place causing the pricee of Government stocks to fall so as to make the successful issue of the loan impossible on the terms named, the Syndicate shall be granted further extension of time, but not beyond eighteen months from the date of this agreement. If within this time limit the first bonds have not been issued, then this contract shall become null and the money paid by the Syndicate under the provisions of Article 3 shall be by the Chinese Government with interest, but without any other compensation or remuneration whatsoever.

17.—The construction and control of the railway will be entirely in the hands of the Imperial Chinese Government. For the work of the northern and southern sections respectively the Chinese Government will select and appoint fully qualified German and British Chief Engineers, acceptable to the Syndicate. These two Chief Engineers shall be under the orders of the Managing Director, or his duly authorized representative, and will carry out all the wishes of the Railway Administration with regard to the plan and construction of the line. They must pay all due respect to the Director General and the Managing Director. The terms of their respective agreements will be arranged by the Director General on his sole authority.

On the completion of the line the Imperial Chinese Government will administer both sections as one undivided Government Railway and will appoint an Engineer-in-Chief, who during the period of the loan shall be a European, without reference to the Syndicate.

18.—For all important purchases of railway materials tenders shall be called for by the Managing Director; and the Banks and Syndicate as Agents shall purchase the materials required on the terms most advantageous to the Railway, and shall charge the original cost of same with a commission of five per cent. It is understood that no orders for materials shall be executed or any expenditure incurred without due authorization by the Managing Director.

The Railway Administration shall have the right to reject on arrival in China materials which do not come up to specifications. At equal rates and qualities goods of German and British manufacture shall be given preference over other goods of foreign origin for the northern and southern sections respectively. The Railways Administration reserves the right, while paying the above stipulated commission to the said Agents in respect of all purchases of foreign materials, to avail itself of the services of other Agents in China or abroad should it see fit to do so.

No commission shall be paid to the Agents except as above provided; but it is understood that the Railway Administration shall provide out of Railway funds for the remuneration of Consulting Engineers whenever their services are engaged.

With a view to the encouragement of Chinese industries, preference will be given, at equal prices and qualities, over British, German or other foreign goods to Chinese materials, and goods manufactured in China. No commission will be paid on purchases of such materials and goods.

19.—Branch lines in connection with the railway line mentioned in this Agreement may be built by the Imperial Chinese Government with funds at their disposal from Chinese sources, if thought advisable, and if foreign capital is required preference will be given to the Syndicate.

20.—The Syndicate is granted the right to retain two hundred thousand pounds sterling (£200,000) out of the first issue of the bonds instead of 20% of the profits of the railway as first proposed. No further payment in respect of profits will be allowed on any subsequent series of the loan, or on any supplementary loan.

21.—After payment of interest and repayment of principal of the loan for any year, the Railway Administration will deposit with the Deutsch Asiatische Bank and the Hongkong and Shanghai Banking Corporation in Shanghai or Tientsin any surplus revenue of the railway line for that year up to the amount required to pay the following year's instalments of interest on the loan; the rate of interest on the deposit being arranged with the Banks from time to time with due regard to the conditions of the market.

22.—The Deutsch Asiatische Bank and the Syndicate may transfer or delegate all or any of their rights, powers, and discretions thereunder to any German or British Company, Directors or Agents with power of further transfer subject to the approval of the Director General.

23.—This Agreement is signed under authority of an Imperial Edict dated the tenth day of the Twelfth Moon of the 33rd year of Kuang Hsu, corresponding to the 13th day of January one thousand nine hundred and eight, Western Calendar, which has been officially communicated to the Ministers of Great Britain and Germany in Peking by the Wai Wu Pu.

24.—Five sets of this Agreement are executed in English and Chinese three sets to be retained by the Imperial Chinese Government and two by the Syndicate. In any case of dispute the English text will be taken as correct.

TIENTSIN-PUKOW RAILWAY SUPPLEMENTARY LOAN AGREEMENT

SEPTEMBER 28, 1910.

Whereas by an agreement made at Peking on the 10th day of the 12th month of the 33rd year of Kuang Hsü corresponding to the 13th day of January 1908, between

His Excellency Liung Tun Yen, Acting Junior Vice President of the Waiwupu, duly authorised to act on behalf of the Imperial Government of China,

of the one part,

and A. The Deutsch Asiatische Bank, Shanghai,

B. The Chinese Central Railways Limited, London,

thereinafter termed the Syndicate,

of the other part,

the Syndicate were authorised to issue, and did issue, a 5% Gold Loan for £5,000,000 for the construction and equipment of a line of railway from Tientsin to Pukow in the Empire of China: and Whereas, in order to permit of the uninterrupted continuance of the work of construction provision was made in Article 15 of the aforesaid Loan Agreement, hereinafter called the Original Loan Agreement, for the issue by the Syndicate of a Supplementary Loan of which the interest and other conditions as well as the price payable to the Chinese Government should be governed by the terms of the original loan agreement which still remains in full force and effect;

This Agreement is now made at Peking this twenty fifth day of the eighth month of the second year of Hsüan Tung, corresponding to the twenty eighth day of September 1910, between;

The Director General and Assistant Director General of the Tientsin-Pukow Railway, Their Excellencies The Grand Councillor and Assistant Grand Secretary Hsü Shih Shang, and the Acting President and Senior Vice-President of the Board of Posts and Communications Shen Yün Pei, duly authorised to act on behalf of the Imperial Government of China,

of the other part,

and A. The Deutsch Asiatische Bank, Shanghai,

B. The Chinese Central Railways Limited, London,

hereinafter called the Syndicate

of the other part,

Article 1. The Imperial Government of China authorises the Syndicate to issue a 5% Gold Loan for an amount of four million eight hundred thousand pounds sterling (£4,800,000). The loan shall be of the date on which the first series of bonds is issued to the public and shall be called "The Imperial Chinese Government 5% Tientsin-Pukow Railway Supplementary Loan."

Article 2. The loan is designed to provide further capital for the construction of a Government railway line from a point connecting the Imperial Railways of North China at or near Tientsin through Techou and Tsinanfu to Ihsien near the Southern frontier of Shantung, hereinafter known as the Northern Section of the Tientsin-Pukow Railway line, and from Ihsien to a point at or near Pukow (opposite Nanking on the Yangtsze Kiang), hereinafter known as the Southern Section of the Tientsin Pukow Railway line, the total length of these two sections being about 1,085 kilometers, equal to about 2,170 Chinese li.

Article 3. The capital so provided shall be solely devoted to the construction of the Railway line including the purchase of land, rolling stock and other equipment, and to the working of the line and to the payment of interest on the loan during the period of construction, which is estimated at 2 years from the signature of this agreement.

Article 4. The rate of interest for the loan shall be 5% per annum on the nominal principal and shall be paid to the bondholders half-yearly. The said interest shall be calculated from the date on which the loan is issued to the public, and shall be paid by the Imperial Chinese Government during the time of construction either from the proceeds of the loan or from other sources, and afterwards, in the first place, out of the revenue of the Railway, and then from such other revenues as the Chinese Government may think fit to use for the purpose in half-yearly instalments according to the amounts specified in the schedule attached to this agreement and fourteen (14) days before their due dates, Western Calendar, as calculated half-yearly from the date on which the loan is issued to the public.

Article 5. The term of the loan shall be thirty (30) years. Repayment of principal shall commence after the expiry of ten (10) years from the date of the loan, and, except as provided in Article 6 hereinafter, shall

be made by yearly amortisation to the Deutsch Asiatische Bank and the Hongkong and Shanghai Banking Corporation out of the revenue of the line or such other revenues as the Chinese Government may think fit to use for the purpose, according to the amounts specified in the schedule attached to this agreement, but fourteen (14) days before their due dates, Western Calendar, as calculated from the date on which the loan is issued to the public.

Article 6. If at any time after the lapse of ten (10) years from the date of the loan the Imperial Chinese Government should desire to redeem the whole outstanding amount of the loan, or any part of it, not yet due for repayment in accordance with the schedule of repayments hereto attached, it may do so until the twentieth (20th) year, by payment of a premium of two and one-half (2½) per cent, on the face value of the bonds (that is to say, by payment of a hundred and two pounds and ten shillings (£102.10) for each £100 bond) and after the twentieth (20th) year without premium; but in each and every case of such extra redemption, the Imperial Chinese Government shall give six (6) months notice in writing to the Syndicate, and such redemption shall be effected by additional drawings of bonds, to take place on the date of an ordinary drawing, as provided for in the Prospectus of the Loan.

Article 7. The Deutsch Asiatische Bank and the Hongkong and Shanghai Banking Corporation having been appointed, by the German and British parties of the Syndicate, respectively, Agents for the service of the loan the payments due for amortisation and interest, referred to in Articles 4 and 5, shall be made, in accordance with the amounts of the Schedule attached to this agreement, and fourteen (14) days before their due dates as fixed by Articles 4 and 5, to these Banks by the Director General of the Railway, who shall hand to the said Banks in Shanghai or in Tientsin fourteen (14) days before the said due dates, funds in Shanghai or Tientsin Sycee sufficient to meet such payments in Gold in Europe, exchange for which shall be settled with the said Banks on the same day, the Railway Administration having however, the option of settling exchange with the two Banks at any date or dates within six (6) months previous to any due date for the repayment of interest and principal. These payments may, however, be made in Gold if the Imperial Chinese Government should happen to have Gold funds "bona fide" at their disposal in Europe not remitted from China for the purpose and desire so to use them.

In re-imbursement of expenses connected with the payment of interest and the repayment of principal of the loan, the Hongkong and Shanghai Banking Corporation and the Deutsch Asiatische Bank will receive a commission of one-quarter (¼) per cent on the annual loan service.

Article 8. The Imperial Government of China hereby engages that the interest and principal of this loan shall duly be paid in full, and should the revenue of the Railway and/or the proceeds of the loan not be sufficient to provide for the due and full payment of interest and repayment of principal, the Director General shall memorialise the Throne and the Imperial Government of China will thereupon make arrangements to ensure that the amount of deficiency shall be met from other sources and handed over to the Banks on the date upon which funds are required, to complete full payment of interest and repayment of principal.

Article 9. The loan is hereby secured:—

1. By a second charge on the likin and internal revenues of the three provinces enumerated in Article 9 of the Original Tientsin Pukow Railway Loan Agreement amounting to Haikuan Tls. 3,800,000 a year, after satisfaction of all the obligations contained in the said Article.

2. By a first charge on the following additional revenues, calculated on the basis of the maximum annual payments of principal and interest due:—

A. Likin and internal revenues of the Province of Chihli to the amount of Haikuan Tls. 1,000,000 a year;

B. Likin and internal revenues of the Province of Shantung to the amount of Haikuan Tls. 1,200,000 a year;

C. Revenue of the Nanking Likin Collectorate [to the amount of Haikuan Tls. 600,000 a year] and of the Huai-an Native Customs [to the amount of Haikuan Tls. 100,000 a year] in the Province of Kiangsu;

D. Likin and internal revenues of the Province of Anhui to the amount of Haikuan Tls. 700,000 a year.

With the exception of the first charge created by the Original Loan Agreement the Provincial revenues as above stated are hereby declared to be free from all other loans, charges or mortgages.

So long as principal and interest of the loan are regularly paid, there shall be no interference with these provincial revenues, but if principal or interest of the loan be in default at due date, then, after a reasonable period of grace, likin and suitable internal revenues of the four provinces sufficient to provide the amount above stated shall forthwith be transferred to, and be administered by, the Imperial Maritime Customs, in the interest of the bondholders. And so long as this loan or any part thereof shall remain unredeemed, it shall have priority both as regards principal and interest, subject to the obligations created by Article 9 of the original loan agreement over all future loans, charges and mortgages charged on the above-mentioned revenues of the four provinces.

No loan, charge or mortgage shall be raised or created which shall take precedence of, or be on equality with this loan, or which shall in any manner lessen or impair its security over the revenues of the four provinces as above stated; and any future loan, charge or mortgage charged on the said revenues of the four provinces shall be made subject to this loan, and it shall be so expressed in every agreement for every such future loan, charge or mortgage. It is underestood and agreed that so long as this loan is unredeemed the Railway shall under no circumstances be mortgaged nor its receipts given as security to any other party.

In the event of the Chinese Government, during the currency of this loan entering upon definite arrangements for the revision of Customs Tariff accompanied by stipulations for decrease or abolition of likin, it is hereby agreed, on the one hand, that such revision shall not be barred by the fact that this loan is secured by likin and provincial revenues, and, on the other hand, that whatever likin is required to provide the security of this loan shall neither be decreased nor abolished except by previous arrangement with the Syndicate and then only in so far as an equivalent is substituted for it in the shape of a first charge upon the increase of Customs Revenue consequent upon such revision.

Article 10. The Syndicate is hereby authorised to issue to subscribers to the loan, Bonds for the total amount of the loan for such amounts as may appear advisable to the Syndicate. The form of the Bonds shall be settled by the Syndicate in consultation with the Director General or the Chinese Ministers in London and Berlin. The Bonds shall be engraved in Chinese and English or Chinese and German as may be required; they shall bear the facsimile of the signature of the Director General and of his seal of Office, in order to dispense with the necessity of signing them all in person: and it is hereby agreed that the Chinese Minister in London shall, previous to the issue of any Bonds, put his seal upon each Bond with a facsimile of his signature, as a proof that the issue and sale of the Bonds are duly authorised by, and binding upon, the Imperial Chinese Government, and the representatives of the Syndicate in London shall ountersign the bonds as Agents for the issue of the loan.

In the event of bonds issued for this loan being lost, stolen or destroyed, the Syndicate shall immediately notify the Director General and the Chinese Minister in London and/or Berlin, as the case requires, who shall authorise the Synnicate to insert advertisement in the public newspapers notifying that payment of the same has been stopped and to take such other steps as may appear advisable or necessary according to the laws and customs of the country concerned, and should such bonds not be recovered after a lapse of time to be fixed by the Syndicate, the Director General or the Chiniese Minister in London, shall seal and execute duplicate bonds for a like amount and hand them to the Syndicate, by whom all expenses in connection therewith shall be defrayed.

Article 11. All bonds and coupons and payments made and received in connection with the service of this loan shall be exempt from all Chinese taxes and imposts during the currency of this loan.

Article 12. All details necessary for the prospectus and connected with the payment of the interest and repayment of the principal of this loan, not herein provided for, shall be left to the arrangement of the Syndicate in consultation with the Chinese Ministers in London and Berlin. The Syndicate is hereby authorised to issue the prospects of the loan as soon as possible after the signing of this agreement; and the Imperial Government will instruct the Chinese Ministers in London and Beelin to co-operate with the Syndicate in any matters requiring conjoint action and to sign the prospectus of the loan.

Article 13. The loan shall be issued to the public in two or more series of bonds, the first issue to be made to the amount of three million pounds sterling (£3,000,000) as soon as possible after the signature of this agreement, and not later than six (6) months from the date thereof. The price to the Imperial Chinese Government of the bonds shall be the actual rate of their to the public, less flotation charges of five and a half (5½) points retainable by the Syndicate (that is to say, a charge of five pounds ten shillings (£5.10/—) for every £100 bond issued). Subscriptions will be invited by the Syndicate in Europe and in China both from Chinese and Europeans on equal conditions, preference being given to the application of the Chinese Government, provided such application be made before the issue of the prospectus to the public.

If before the issue of this loan has been completed and during the period of construction it is found that the capital to be provided under Article 3 is already sufficient the Director General shall have the power, at his discretion, to dispense with the issue of further bonds.

Article 14. The proceeds of the loan shall be paid to the credit of a Tientsin Pukow Government Supplementary Loan Account with the Hongkong and Shanghai Banking Corporation and the Deutsch Asiatische Bank in China, London or Berlin, as the case may be. Payments of loan proceeds into the credit of this account shall be made in instalments and on dates conforming to the conditions allowed to the subscribers to the loan. Interest at the rate of four (4) per cent per annum shall be granted on the credit balance of the portion of this account kept in London and Berlin, and interest on the credit balance of the portion kept in China will be allowed at the Banks' rates for current accounts, or fixed deposits, as the case may be, to be arranged After deduction of the funds required for the service of interest and for commission on this service during the time of construction, the Banks will hold the net proceeds with accrued interest to the order of the Director General, who, in ordering payments of any sums exceeding twenty thousand pounds (£20,000) shall give notice to the Banks ten (10) days before the day on which they are required. Requisitions on the loan funds will be drawn in amounts to suit the progress of construction of the Railway by orders on the Hongkong and Shanghai Banking Corporation and the Deutsch Asiatische Bank respectively, signed by the Managing Director of the Railway or, in his absence, by his duly authorised representative, and accompanied by his certificates stating the nature and cost of the work to be paid for.

Such amounts as may be required in China may at any time be transferred by the Managing Director, at his discretion, to Shanghai, the transfers being effected through the Hongkong and Shanghai Banking Corporation and the Deutsch Asiatisch Bank respectively, and the transferred funds shall remain on deposit with those Banks until required for railway purposes.

The accounts of the Railway will be kept in Chinese and English in accordance with accepted modern methods, and will be supported by all necessary vouchers. During the period of construction the said accounts and vouchers will be open at any time to the inspection of an Auditor, appointed and paid by the Syndicate, whose duties will be confined to certifying to the Syndicate to the due expenditure of the loan funds in accordance with the provisions of Article 3 of this agreement, and to certifying to a monthly statement of the foreign materials purchased by the Railway Administration under the provisions of Article 18 hereinafter. He will arrange with the Railway Administration that his inspections shall take place on such dates and at such intervals as will enable him efficiently to carry out his duties as herein provided. The Railway Administration will publish annually upon the close of its financial year, a report in the Chinese and English languages showing the working accounts and traffic receipts of the Railway, which report shall be procurable by the public on application.

Article 15. If during the time of construction the net proceeds of the present loan with accrued interest should, after deduction of the sums necessary for the service of interest on the loan, not be sufficient to complete the construction and equipment of the Railway line, the amount of deficiency shall be provided, in the first place, from such Chinese funds as may be available so as to permit of the uninterrupted continuance of the work of construction, any balance then uncovered being supplemented by a further foreign loan, for the amount required to be issued by the Syndicate. The interest and other conditions of such supplementary loan will be the same as in the present agreement and the price will be determined as in the case of the present loan. If after the completion of the line there should be a balance at credit of the Railway Supplementary Loan Account such unused balance will be transferred to the credit of the interest reserve fund hereinafter mentioned in Article 20 as a provision for payments for which the Imperial Chinese Government is responsible under this Agreement.

Article 16. If, before the publication of the prospectus for the issue of the loan, any political or financial crisis should take place by which the market and the prices of existing Chinese Government stocks are so affected as to render, in the opinion of the Syndicate, the successful issue of the loan impossible on the terms herein named, the Syndicate shall be granted further extension of time but not beyond nine (9) months from the date of this agreement, for the performance of their contract. If within this time limit the first series of the loan shall not have been issued, then this contract shall become null and void.

Article 17. The construction and control of the railway will be entirely vested in the Imperial Chinese Government. For the work of construction of the Northern and Southern Sections respectively the selection and appointment by the Imperial Chinese Government of fully qualified German and British Chief Engineers, acceptable to the Syndicate, which have already been made, will be continued as heretofore. In the event of the Syndicate objecting to any proposed appointment, the cause of such objection shall be definitely stated. These two Chief Engineers shall be under the orders of the Managing Director, or, in his absence, his duly authorised reprepentative, and will carry out all the wishes of the Railway Administration with regard to the plan and construction of the line. In their general conduct they shall pay all due respect to the Director General and the Managing Director. The terms of their respective agreements will be arranged by the Director General on his sole authority.

Whenever appointments are to be made or functions are to be defined of the technical employés on the railway staff, as well as in the case of their dismissal, the Managing Director, or, in his absence, his duly appointed representative, will act in consultation with the Chief Engineer of the section concerned, and, in the case of disagreement the matter will be referred to the Director General whose decision shall be final.

After completion of construction the Imperial Chinese Government will administer both sections as one undivided Government Railway and will appoint an Engineer-in-Chief, who during the period of the loan sha be a European, without reference to the Syndicate.

Article 18. For the Northern and Southern Sections of the Railway respectively the Deutsche Asiatische Bank and the Chinese Central Railways Limited will act as Agents of the Railway Administration, during construction, for the purchase of all metarials, plant and goods required to be imported from abroad. For all important purchases of such materials, tenders shall be called for by the Managing Director; in the case of all tenders, indents and orders for the importation of goods and materials from abroad, the said Agents shall purchase the materials required on the terms most advantageous to the Railway, and shall charge the original net cost of the same plus a commission of five [5] per cent. It is understood that no orders for materials shall be executed or any expenditure incurred without due authorisation by the Managing Director.

In return for payment of commission as above stated, the Deutsch Asiatische Bank and the Chinese Central Railways Limited as Agents within their respective sections, shall be prepared to superintend the purchase of all foreign materials required for the construction and equipment of the Railway, which shall be purchased in the open market at the lowest rate obtainable, it being understood that all such materials shall be of good and satisfactory quality, and that the Railway Administration shall have the right to reject on arrival in China materials which do not come up to specifications. At equal rates and qualities goods of German and British manufacture shall be given preference over other goods of foreign origin for the Northern and Southern sections respectively. The Railway Administration reserves the right, while paying the above stipulated commission to the said Agents in respect of all purchases of foreign materials, to avail itself of the services of other Agents in China or abroad should it see fit to do so. Original invoices and Inspectors' Certificates are to be submitted to the Managing Director; all return commissions and rebates of every description shall be credited to the Railway; and all purchases made by the Agents on behalf of the Railway shall be supported by manufacturers' original invoices and inspectors' certificates.

No commission shall be paid to the Agents except as above provided; but it is understood that the Railway Administration shall provide out of Railway funds for the remuneration of consulting engineers whenever their services are engaged.

With a view to the encouragement of Chinese industries, preference will be given, at equal prices and qualities, over British, German or other foreign goods, to Chinese materials and goods manufactured in China. No commission will be paid on purchases of such materials and goods.

It is understood and agreed that after the construction of the line is completed the Deutsch Asiatische Bank and the Chinese Central Railways Limited, within their respective sections, will be given the preference for such Agency business, during the currency of the loan, for the supply of foreign materials as the Railway Administration may require, on terms to be hereafter mutually agreed upon.

Article 19. Branch lines in connection with the Railway line mentioned in this agreement that may appear profitable or necessary later on shall be built by the Imperial Chinese Government with funds at their disposal from Chinese sources, and if foreign capital is required, preference will be given to the Syndicate.

Article 20. After payment of interest and repayment of principal of the loan for any current year, the Railway Administration will deposit with the Deutsch Asiatische Bank and the Hongkong and Shanghai Banking Corporation in Shanghai or Tientsin any surplus of the net revenue of the Railway line for that year up to the amount required to pay the following year's instalments of interest on the loan; the rate of interest on the deposit being arranged with the Banks from time to time with due regard to the conditions of the market.

Article 21. The Deutsch Asiatisch Bank and the Chinese Central Railways Limited may, subject to all their obligations under this Agreement, transfer or delegate all or any of their rights, powers and discretions thereunder to any German or British Company, Directors or Agents with powers of further transfer, and sub-delegation; such transfer, sub-transfer, delegation or sub-delegation to be subject to the approval of the Director General.

Article 22. This Agreement is signed under authority of an Imperial Edict dated the nineteenth day of the eighth month in the second year of Hsüan Tung, corresponding to the twenty second day of September, 1910, Western Calendar, which has been officially communicated to the Ministers of Great Britain and Germany in Peking by the Waiwupu.

Article 23. Five sets of this Agreement are executed in English and Chinese, three sets to be retained by the Imperial Chinese Government and two by the Syndicate.

In the event of any doubt arising regarding the interpretation of the contract, the English text shall rule.

Signed at Peking by the contracting parties this twenty fifth day of the eighth month of the second year of Hsüan Tung, corresponding to the twenty eighth day of September one thousand nine hundred and ten, Western Calendar.

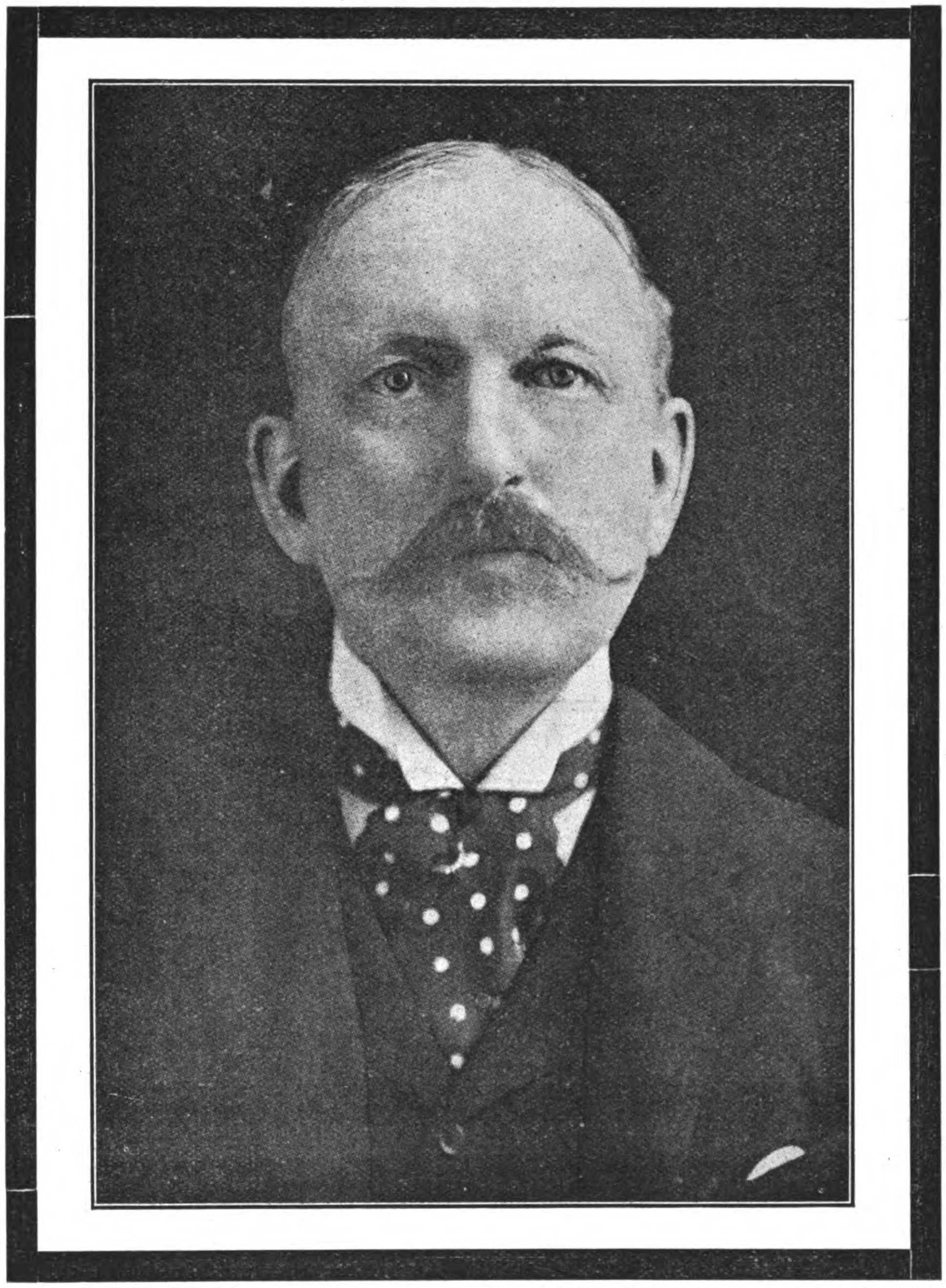
For Deutsch Asiatische Bank, H. CORDES	Director General, Tientsin-Pukow Railway, HSÜ SHIH CHANG.
For the Chinese Central Railways Limited, S. F. MAYERS.	Assistant Director General, Tientsin-Pukow Railway, SHEN YUN PEI.

Seal of Director General
Tientsin-Pukow Railway

THE FAR EASTERN REVIEW
COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XI. SHANGHAI, DECEMBER, 1914 No. 7

"WITH PATIENCE, FORBEARANCE AND HOPE"



THE LATE ADVISER TO PRESIDENT YUAN

WILLIAM WOODVILLE ROCKHILL

"I agree with President Eliot in thinking that 'the Western world ought to stand by China with *patience*, *forbearance*, *and hope*, while she struggles with her tremendous social, industrial, and political problems.'"

THE FAR EASTERN REVIEW

COMMERCE :·: ENGINEERING :·: FINANCE

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FINANCE IN CHINA

BY GEO. BRONSON REA

Under the above title, Mr. Srinivas R. Wagel presents to the reading public his thoughts on the ever present and intricate problem confronting the new Republic, in a volume of 490 pages. The author states in his introduction "whether at the time of the change in the Ming dynasty from Nanking to Peking, whether at the time of the usurper at Peking during the inter-regnum between the Ming and the Manchu dynasties, or even during the first reign of the Manchus, the treasury has been as depleted of funds as it is to-day and has been for the past two years."

Mr. Wagel some years ago published and edited "Capital and Commerce," a weekly journal devoted to trade and finance. Since its failure, he has occupied the position of Financial Editor of the "North-China Daily News," and has had excellent opportunities to compile and write an authoritative work on the loans and finances of China, a work which at least would have served as a reference to those interested in the subject. A perusal of the book, however, discloses that the author is unreliable as to his dates and deductions in several important financial matters, which not only disqualifies him as an authority, but destroys the value of his book for serious reference. With these inaccuracies before us, we have refrained from going deeply into the contents of the various chapters. Mr. Wagel announces that he has three other books on kindred subjects in preparation and in the press, but an author who has such a disregard for dates and facts, cannot expect to be taken seriously. If "Finance in China," is to be accepted as a standard of the forthcoming volumes, we candidly advise the author to wait until he can assimilate facts and adhere to dates before inflicting his thoughts on an unsuspecting public. As a sample of Mr. Wagel's unreliability we cite the following instances:

On page 39, in the chapter on China's indebtedness, appears this statement: "During 1906 the Hongkong Government furnished China with a loan of £1,100,000 for the construction of the Canton-Hankow Railway. Unfortunately most of the amount was wasted, and only a very small portion of the projected line was built."

This is a sample of his knowledge of China's finances. We remember that the £1,100,000 loaned to China by the Hongkong Government was for the purpose of compensating the American Company for the redemption of the concession. It is known as the Canton-Hankow Redemption Loan, and the disposition of the funds was clearly specified in Clause 7. The sum of £700,000 was paid by the Hongkong and Shanghai Bank to the Chinese Minister at Washington for immediate payment to the American Company, and £400,000 was paid to Viceroy Chang at Wuchang on the condition that he furnish evidence from time to time to the British Consul at Hankow, that the funds were being actually expended in re-purchasing the concession. Mr. Wagel not only errs in qualifying the loan as a constcurtion loan, but gratuitously adds that "unfortunately most of the amount was wasted, and only a very small portion of projected line was built."

In referring to the Peking-Hankow Redemption Loan on the same page, Mr. Wagel states: "While the British and French were negotiating, the Germans offered to give the loan themselves in order to have some sort of influence over China. As a matter of fact, it was understood that there should be no German participation in any loan that was raised for the redemption, but to the surprise of everybody, it was learnt that German interests had arranged and signed a loan for £5,000,000 with the Chinese Government. This loan was however cancelled later."

This statement of Mr. Wagel's is proof of his incompetency to handle the subject of finance in China. As a matter of fact, the German Bank never made any advances to the Chinese Government to supply the Peking-Hankow Redemption Loan, recognizing that China was morally obligated to raise the redemption loan in the countries which furnished the original funds. The only object of the redemption loan was to buy out the Belgian rights to participation in the profits and control. In other words the transaction was similar in nature to the surrender

for an equitable consideration, of the American rights to the Canton-Hankow concession and its profit sharing clause. The Peking-Hankow Redemption Loan was very harmoniously negotiated by the British and French bankers with the Chinese authorities without the slightest cause for friction. Had Germany concluded a prior redemption loan for this Franco-Belgian line the episode undoubtedly would have assumed international importance. The author confuses the German loan of £3,000,000 signed on March 7, 1909, for construction of the Hukwang lines, which was subsequently cancelled on the protest of the British Government, with the Peking-Hankow Redemption Loan. Such inexcusable flights of fancy are out of place in a serious book for serious people.

On page 421, in his brief account of the Peking-Hankow Railway, the author is again wrong in his dates and deductions. In describing how the concession went to the Belgians, he says, "It was not merely a question of breaking faith with the American Syndicate that was then negotiating with Sheng Kung-pao but it was also breaking faith with Great Britain. On an earlier occasion, with the full knowledge of the Chinese Government, Great Britain and Russia came to an arrangement by which the Yangtsze Valley was to remain the sphere of British influence. Nevertheless the contract with the Franco-Belgian Group was signed and diplomacy triumphed."

The Peking-Hankow Preliminary Agreement was signed on May 27, 1897, and the final Agreement on July 21 of the same year. It was owing to the fact that a Russian Bank was interested in this transaction and also that the Russian Government subsequently opposed the British loan to the Imperial Northern Railways in 1898, that the British Government sought an understanding with the Russian government to define their respective spheres. The Scott-Mouravieff exchange of notes was dated April 28, 1899, or two years after the Peking-Hankow Agreement was signed. Mr. Wagel had the right idea about a breach of faith, but didn't know just where it happened. It certainly could not haveapplied to an understanding signed two years after the Peking-Hankow concession was granted. There was a breach of faith, and any one at all conversant with the history of that period knows that it referred to China's promise to the British Minister that the concession would never receive Imperial sanction if it was found that Russia was in any way interested in it.

In describing the Canton-Hankow Railway, Mr. Wagel says, "When in 1896-1897 American financiers were foiled in their efforts to obtain the concession for the construction of the Peking-Hankow Railway, the American China Development Company was given the concession for constructing this line, *mainly as a sop.*" Why a "sop"? Was not any other railway concession at that time a sop to the various Powers to keep them quiet? The American Government used no pressure on the Chinese authorities to secure this concession. It was distinctly a business deal, with only the friendly support of the American Legation. The British railway concessions were obtained through severe diplomatic pressure, and a study of the Blue Books of that year disclose that force was to be employed if the British demands were not complied with. The word "sop" used in connection with a legitimate American concession at that time savors strongly of bias.

Mr. Wagel continues: "When the Spanish-American War broke out, the Americans had done very little, although their concession had already had Imperial sanction." Here again the author plays fast and loose with dates and deductions. The preliminary contract for the line was signed at Washington on April 14, 1898, by Mr. Wu Ting-fang. War with Spain was declared on April 22, or eight days afterwards. The Preliminary Agreement provided that surveys should be made at once, and as a result of the survey it was found that additional funds would be required. It speaks well for the energy of the American Company, that the Final Agreement was signed on July 13, of the same year.

How could the Americans be expected to do anything before the Spanish-American War, when the Preliminary Agreement was signed only eight days prior to its outbreak, and the Final Agreement signed only after the war was over, in July? This again implies that the author is not only disqualified to handle the subject, but as his subsequent statement reveals, is animated by a desire to belittle America.

In commenting on the redemption of the line Mr. Wagel remarks: "This Company was only anxious to obtain as much as possible out of the sale of the concession back to the Chinese and just for the 32 miles the Chinese Government had to pay $6,750,000, and thus close a scandal." If the author desired to be fair he could have stated that the $6,750,000 paid to the Company represented an expenditure of $3,000,000 for the 32 miles of completed line between Canton and Samshui and about 50 miles of completed earthwork and construction materials, and $3,750,000 as compensation for the loss of one-fifth of the prospective profits during the 50 year life of the concession. As the action of the American Company in demanding compensation for the loss of prospective profits in a fifty year concession on which they were already well advanced, is invariably held up by interested writers as a scandal or robbery, it is well to remind our readers that other preliminary Agreements entered into by Britain and Germany in 1898, which included a 20 per cent. participation in the profits, on being re-written to meet changed conditions, provided for adequate compensation for the cancellation of the profit sharing clause. China had to pay Britain and Germany Gold $1,000,000 for the cancellation of this clause in the Tientsin-Pukow Railway, and Gold $600,000 in the Pukow-Sinyang line. But these facts are either unknown to the average writer on Chinese railways finance, or deliberately ignored in commenting on the price paid for the surrender of the American rights. If it was a scandal for the Americans to receive compensation for surrendering a profit sharing concession to China, how would the writer qualify the same action in the Tientsin-Pukow and Pukow-Sinyang railways, or the sale of the Peking Syndicate line to China at nearly double its actual cost, or the surrender of the Peking-Hankow profit sharing rights, through the redemption loan for that line. For several years European writers have insisted on denouncing the American transaction as a scandal and robbery, but ignore the facts when the shoe is on the other foot.

A further example of Mr. Wagel's unfitness to pose as an authority on Finance in China, is shown in his remarks on the Tientsin-Pukow Railway loans. Passing by some minor inaccuracies found on page 428, Mr. Wagel says on page 429, "A contract was also made for a supplementary loan of £3,400,000. The loan was not issued, the banks instead supplying the funds, whenever needed, for the construction." Mr. Wagel might be excused for his failure to have an accurate knowledge of events before his arrival in China, but there are no extenuating circumstances to plead for his inability to adhere to facts which must have come under his observation as a financial editor in China during the last four years.

The Tientsin-Pukow Supplementary Loan, signed on September 28, 1910, was for the sum of £4,800,000, instead of £3,400,000 as Mr. Wagel states, and on November 3 of the same year, the first installment of the loan amounting to £3,000,000 was issued simultaneously in London and Berlin. The British share was £1,110,000, and the remainder, £1,890,000, was offered in Berlin. The second installment of the Supplementary Loan was never issued, the Banks advancing the funds themselves against the prospective issue. Such disregard for facts destroys the value of the book.

Mr. Wagel further on makes the usual slighting reference to Dr. Sun Yat-sen's railway program in the following words: "It is useless to refer in detail to Dr. Sun Yat-sen's schemes: his schemes were neither practicable, nor, as later events proved, was it his intention to go on with the development of railways." In a preceding chapter, the author takes occasion to give another gratuitous fling at Dr. Sun by saying: "Very little was done however, by Dr. Sun Yat-sen, who was appointed Railway Commissioner for all China, at a princely salary, as soon as he resigned his temporary office as President of the country: and since he has been actively engaged in political work, it is very doubtful if he did anything in the way of promoting railways at all."

These are matters which the author is entirely ignorant of, and his aspersions on Dr. Sun are unwarranted. Dr. Sun's revised railway scheme was not only entirely practicable and feasible, but met with the indorsement and approval of every financier in Europe and America to whom it was shown. Mr. Wagel's

book will go out to the public with the stamp of approval of the "North China Daily News," the leading exponent of British opinion in the Far East, and will be quoted as an authority by those who have sublime faith in the infallibility of its Financial Editor. As his ideas will be generally accepted by other editors throughout the East, the following information about Dr. Sun Yat-sen's railway scheme will be illuminating, and we trust that in a spirit of fair play these facts will be given the same publicity as the many condemnations of his scheme.

DR. SUN YAT-SEN'S RAILWAY PROGRAMME

A DEFENCE

BY GEO. BRONSON REA.

When Dr. Sun Yat-sen was empowered in September, 1912, by President Yuan Shih-Kai to organize a national corporation or company for the financing and construction of future railways in China, wide spread publicity was given to his ideas, through the medium of several speeches whereby Dr. Sun hoped to awaken his countrymen to a full realization of what railways meant to the future prosperity and development of the country. At that period Dr. Sun held the view that it would be well nigh impossible to arouse enthusiasm amongst the people, by advocating the construction of a few thousand miles of trunk lines such as any tyro familiar with the needs of China could outline, so he deliberately traced on a large map an elaborate, comprehensive scheme embracing 60,000 miles of railways to illustrate his idea of what China actually required to take her place abreast of other countries where modern transportation had reached its highest development. Dr. Sun's so-called dream was nothing more or less than a prophetic vision of the lines which in the next fifty years China will be compelled to construct. His mistake consisted in giving publicity to his ideas without a full explanation of what he had in mind. These with his rather vague fancies of financing the lines, and the length of time they would take to construct, were outlined in various speeches for the benefit of Chinese audiences, and were given world-wide publicity through the foreign press associations. That foreign public opinion should unanimously agree in stamping him as a visionary and his scheme as impracticable was a foregone conclusion. The world smiled and refused to take him seriously. A mistake was undoubtedly committed in making no effort to counteract the prevailing idea at that time, but to do so would have necessitated the publication of important details, which might have brought about immediate failure of his plans owing to the delicate international political questions involved and the monopoly held by the Official Groups for railway loans to China. Since the time of his speeches in Northern China in September, 1912, the public has received no official or accurate information concerning the work of the Chinese National Railway Corporation, and the opinion then formed from Dr. Sun's incomplete exposition of his ideas for Chinese consumption, has for various good reasons been permitted to prevail without any attempt at correction.

When Dr. Sun arrived in Shanghai from Peking to put his plans into operation one of his first acts was to enlist the services of a competent adviser. There were several highly qualified British and European railway experts who aspired to the position, but Dr. Sun inclined to the belief that in the preliminary work of his organization he required the aid of one who had an intelligent grasp on the political problems connected with Chinese railways rather than a trained and experienced technical railway expert. He held that he needed some one who had a thorough knowledge of the trade routes and topography of the country, and whose advice would guide him aright in devising his final scheme, by steering him through the maze of international political pitfalls created by the many treaties, conventions and loan agreements through which China had parted with her rights. It was his earnest desire that his final program would be in strict accordance with rights already ceded to other parties, so that no international obstacles could be placed in the way of its success. He knew that his original scheme if officially presented to the world would embarass and compromise the President and the new Government, and he was animated by the most loyal and patriotic motives in trying to avoid any complications.

Passing over the high qualifications and merits of several well known foreign railway experts, Dr. Sun after consultation with many prominent Chinese invited me to join him as his adviser on these preliminary matters. I pointed out to Dr. Sun that I was not a railway engineer, and had no experience in the construction and operation of railways, and that my only qualification for such an honor was my knowledge of international politics as expressed in concessions and intrigues for control of China's railways. I warned Dr. Sun that my appointment would be adversely criticized by others having a more practical experience in the construction of Chinese railways. I therefore suggested that the title of Technical Secretary would be more in accord with the nature of the duties of the position, instead of the word adviser, which had lost considerable of its significance in China. This would leave the door open in the future for the employment of a proper technical expert as Adviser to the Company.

On assuming the position of Technical Secretary of the Chinese National Railway Corporation, Dr. Sun confided the revision of his original unwieldy railway scheme into my hands, and at my suggestion no authoritative information concerning the plans of the Corporation was allowed to leak out to the public from that date; the only parties entitled to such information being the higher officials of the Government at Peking. A comprehensive scheme for the construction of 10,000 miles of essential trunk lines was then designed, to be financed and constructed over a period of ten to fifteen years, calling for the expenditure of £100,000,000 or at the rate of £6,666,666 per year, a perfectly feasible and practical scheme for the financial markets of the world to assimilate.

As Dr. Sun found it impossible to leave China at that time to initiate negotiations for the financing of the lines, he requested me to undertake this mission and pave the way for him to come to Europe later on, and ratify and sign the final contracts. In order to successfully enter into negotiations, Dr. Sun appointed me as his Deputy, with a full power-of-attorney to act for him and the Corporation in arranging preliminary financial terms for the construction of the proposed system. It was left entirely to my discretion as to whether the scheme should be offered as a whole to an international combination of independent capitalists, to the Official Banking Groups, or whether it should be disintegrated, and separate contracts entered into for each line. The scheme as presented to the leading financiers in England, France and America met with their unqualified approval, and in France and America it was indorsed by members of the Official Banking Groups as the most practical plan yet presented for the solution of the intricate Chinese railway problem. The scheme could have easily been financed in its entirety, as negotiations could have been opened and preliminary agreements signed so that China would have been obligated to their final acceptance. Owing to certain political complications and the attitude of one of the official institutions who refused to relinquish certain perquisites connected with the departmental system of construction, I decided that another plan should be carried out in China by inviting the great construction firms to enter the field, feeling confident that with their experience and organization, they could build the railways more economically and expeditiously than individual engineers nominated by the Banks under the prevailing departmental system, where the Banks are the principals to the contract.

With this idea in view a contract was arranged with the greatest firm of railway constructors in the world, a firm who had already built thousands of miles of lines in other countries, whose credit and reputation for honest work was such that the building of all the Rhodesian lines had been entrusted to their care by the Rhodesian Government on a percentage basis without competition. The terms arranged with Messrs. Pauling & Company of London were most equitable and honorable to both sides, in fact, they are universally recognized by all disinterested financiers and engineers, as the most favorable financial and construction terms ever accorded to any Government for work of this nature. So favorable were they that I have been criticized by my intimate friends in other large financial and engineering firms for permitting such a precedent to be established, on the grounds that China was not entitled to such special consideration when all other Governments recognized a higher rate of profit to the contractor. I may go further and state that it is almost impossible to duplicate the terms in any future contract. The agreement with Messrs. Pauling & Company created an entirely new precedent for the construction of railways in China, and liberated the Chinese Government from the usual terms of the departmental system, by opening the door to an experienced railway construction firm who up to that time had been debarred from operating in China by the enforcement of the monopoly accorded the official banking groups for business of this nature.

All other Governments in the world are now carrying on important construction works on a percentage basis with reputable engineering firms, in fact under certain given conditions a percentage or cost plus a fixed sum contract is the only feasible method to get the work financed and started. The system has been found good for the most enlightened Governments in the world, and from my own knowledge and experience as a contracting engineer for public and other works, I had no hesitation in assuming the responsibility for employing it in the construction of Chinese railways, especially as no survey had been made or could be made with in the time and funds at the disposal of the Corporation.

Whether I was right or wrong in this decision is purely a matter of opinion. My judgment on this point is as good as that of any railway engineer in China, and I have the experience of other Governments to justify my action. The only opposition to its adoption in China arises from interested and prejudiced parties who prefer to fasten the departmental system on a weak Government, so certain practices and perquisites can be perpetuated. The essentials to the faithful performance of a percentage contract are an honest and experienced contractor of high financial standing, and honest supervision on the part of those appointed to protect the Government's interests. Given a reliable, honorable and competent contractor with an established reputation, and an honest official to guard the interests of the Government, the percentage or cost plus a fixed sum contract are the most equitable manner of carrying on large public works where it is impossible to make an accurate estimate at the time of entering into the contract. If the Government objects to such a contract, it simply indicates distrust in the integrity of its own officials, and merely adds further ammunition for bankers to insist on more stringent terms in supervising the expenditure of loan funds. "Cost plus a fixed sum" is undoubtedly the best arrangement, but with honorable contractors and faithful inspectors representing the other side, the percentage system is as equitable in the end. The legitimate, recognized percentage of profit allowed by all European and American Governments on large public works is invariably ten per cent. over the actual cost of construction. I can cite several such contracts being actually carried out for various Governments throughout the world. Messrs. Pauling & Company were willing to undertake the work in China on a basis of seven per cent. profit over the actual cost of construction, or three per cent. under the standard rate other Governments consider as fair and reasonable. The financial terms were also one half of one per cent. better than the last Chinese railway loan. The Agreement for the Canton-Chungking line speaks for itself. As Dr. Sun could not personally visit London to arrange the details and sign the agreement, at my suggestion it was arranged that Lord French, the representative of Pauling & Company in China, should proceed to Shanghai and negotiate the details directly with Dr. Sun. While these meetings were taking place, other negotiations with well known and experienced contractors and financiers were initiated in London and Paris on the same favorable terms as the contract with Pauling & Company. Being desirous that Dr. Sun should have all the honor and prestige arising from the success of his plans, I refrained from definitely compromising him with other parties until the Pauling contract with all its details was formally signed, so it could serve as a precedent and guide to others. I was also very anxious that Dr. Sun should leave China and come to Europe to conclude the other contracts on the ground, so he could personally reap all the credit and honor that belonged rightfully to him as head of the Corporation and originator of the scheme. My one regret is that I permitted the transfer of the Pauling negotiations from London to Shanghai instead of urging Dr. Sun to come to London, as then he would never been have actively inplicated in the rebellion which destroyed his usefulness. The contract for the financing and construction of the Canton-Chungking Railway was signed at Shanghai on July 4th, 1913 between Lord ffrench and Dr. Sun, or within a month after Lord ffrench arrived in Shanghai from Peking. Copies of the contract were due to arrive in London by the Siberian mail on the 20th of July, when active negotiations could proceed with the other parties who had already accepted the basic terms. On the 18th of July, the rebellion against President Yuan was commenced, and two days later Dr. Sun's powers as Director General of the Chinese National Railway Corporation were annulled by the President in a special mandate, thus bringing to an abrupt termination all further negotiations in Europe.

From that time to this not one word about Dr. Sun or his railway plans has been conveyed to the public by any one formerly connected with him, nor has the Government itself made any public statement. This silence is due to the fact that absolutely nothing was known about what had been accomplished. Dr. Sun's papers and records were removed from his office before his flight to Japan, and his Chinese assistants and staff have been deterred from saying anything in defense of his railway scheme for fear of being misinterpreted and implicated in the abortive rebellion against the President. If the Government knew anything about his railway plans it very wisely refrained from making public any information that might reflect credit on a man proscribed as a political outlaw. Of Dr. Sun's political schemes and dreams, I know nothing. I do know however that during my connection with him as the Technical Secretary or Adviser to the Chinese National Railway Corporation, and as the Deputy Director General holding his Power of Attorney, nothing but the highest and most honorable patriotic motives and complete devotion to the best interests of his country characterized his labors for the perfection of a practical railway scheme for China. Up to the time of my departure from China on the special mission, Dr. Sun would listen to no criticism of the President from his subordinates in the Corporation. He trusted him implicitly, and I personally know that when appealed to from all parts of the country to permit his name to be used as a candidate for the Presidency in the coming elections, Dr. Sun worked in his home until early morning hours writing letters to his friends and adherents advising them to support Yuan Shih-kai for the Presidency. Dr. Sun's parting and private instructions to me were emphatic in that he did not desire one cent set aside as commission for himself or the Corporation in any negotiations I might initiate. He desired that the lowest possible terms should be secured for the country, and he confided in my honor and integrity to protect his reputation from any taint or suspicion of graft or illegal commissions. In other words he placed his reputation in my keeping.

As I have already remarked I know absolutely nothing of Dr. Sun's political plans. I was never taken into his confidence on these matters, nor did I ever discuss politics with him. I questioned him once on the stories about his relations with the President, and he assured me that he had the highest confidence in President Yuan and that the most cordial relations existed between them. And at that time this was true. Once only did I venture to intrude my ideas and advise him on Chinese political matters. In a letter written from London I urged him to lay aside all party differences, and go to Peking and co-operate with President Yuan by accepting the position of

Premier or any cabinet post, where he could control the Kuo Ming Tang element of Parliament who were obstructing the organization of the Government and compelling the President to take the reins in his own hands as the only way to extricate the country from its critical position. I pointed out that such a step on his part would harmoniously unite North and South, restore confidence and contribute to the rapid reconstruction of the country. The practical experience he would gain in active administrative and legislative work in Peking would strengthen his position and grasp on public affairs, and pave the way to greater usefulness in the future. I have since learned that Dr. Sun approved of my advice and decided to act on it. At a secret political meeting this matter was fully discussed and received the indorsement of most of the leaders present. I am informed however that one of the members in a passionate tirade against the President, obstinately opposed such a step and Dr. Sun's good resolutions were voted down on purely party grounds.

As to Dr. Sun's railway scheme I was fully informed, for whatever plans he had, and whatever was done to further them, had been outlined and carried out by myself. I am responsible for his scheme, and the financial negotiations in London, Paris and New York. My personal work along these lines reflected on him as my principal, and his personal reputation as an honorable official depended on my integrity. From the time I left Shanghai in January, 1913, until his powers were annulled on July 18th, Dr. Sun confided the preliminary negotiations to my discretion, and never once during this time did he write me a letter of instruction or hamper my freedom of action with any suggestions, or question the wisdom of my plans. He was guided entirely by my few cablegrams and acted promptly and in accordance with all my recommendations. In other words Dr. Sun placed the utmost confidence in my ability and integrity, and stood to succeed or fail on my judgment and the outcome of my mission abroad. I would point out that with one single exception, where Dr. Sun signed an agreement on the eve of his flight from Shanghai at the time of the rebellion, there were no compromises or complications left for the Central Government to assume. The Canton-Chungking Railway Agreement was signed while Dr. Sun was in full possession of his powers, and was therefore valid and legal, and recognized as such by the British and Chinese Governments. When his powers were annulled, the other negotiations initiated in London and Paris were amicably terminated, with a clear mind and clean hands and with no fear of future compromises for the Government at Peking or for myself. My work in Europe is open to the fullest investigation and scrutiny. The record is clean and honorable, characterized by a firm defense of China's rights and a recognition of equal opportunity for other nations interested in China.

With this exposition of facts it becomes evident that my personal reputation is involved in any final judgment on Dr. Sun's railway scheme. For the last eighteen months I have been unable to protect myself against hostile criticisms, falsehoods and insinuations directed against Dr. Sun and his railway scheme, owing to the fact that the Ministry of Communications confirmed the appointment I held under Dr. Sun, and entrusted me with further matters connected with the development of railways in China. As this official connection is now terminated I am free to answer any and all attacks and insinuations against Dr. Sun's railway program, and the financial arrangements entrusted to my care.

I hold no brief for Dr. Sun Yat-sen and his political propaganda. I cannot defend his intrigues and open rebellion against the Government, but in the very nature of things I am compelled to take notice of reflections on his railway scheme and the financial negotiations and diplomatic conversations abroad in which I was the principal figure. Dr. Sun may have conducted negotiations with others without my knowledge. Of his negotiations in Japan, I cannot speak with authority. Of all such matters I know nothing, as I never received a letter from him while I was abroad. It is hardly probable however that any serious negotiations could have taken place with reputable financiers, without my hearing of them in Europe. (I mention this because it has been insinuated that my mission in Europe was to raise funds for the rebellion through the sale of railway concessions and contracts.) The one contract negotiated, speaks for itself. I am willing to be judged by that. The fact that no other compromises resulting from my work have been brought to light in eighteen months is sufficient proof of the absurdity of such stories. If any money had been advanced on a railway contract, the contract would have been forthcoming by this time, and demands made on the Government for its recognition. Such stories are not only a reflection on my own conduct, but imply that there are still gullible financiers ready to part with hard cash on such unbusiness like propositions.

Honest criticism of the scheme itself, or a frank discussion on the advantages or disadvantages of the contract system of construction are legitimate and welcome, as this involves merely a matter of opinion, but malicious, mendacious and at times libellous references to Dr. Sun and myself cannot be permitted to pass unnoticed. If these attacks were inspired by a knowledge of the scheme or what had actually been accomplished, they might be justified in part, but as the authors are absolutely ignorant of many facts, it becomes evident they are acting unjustly in abusing a political refugee who cannot defend himself, and ignore the fact that a foreigner was practically directing the scheme and its financing abroad. I owe it therefore not only to Dr Sun but to myself and other Americans who may be called upon in the future to co-operate with the Chinese, to inform the public of the real facts connected with Dr. Sun Yat-sen's railway scheme and my personal connection with it. To this end I hope in the near future to publish in the columns of THE FAR EASTERN REVIEW and in permanent book form the history of the Chinese National Railway Corporation and its work for the advancement of China's prosperity through the development of railways. I have no intention of wounding the sensibilities of the present Government at Peking, who hold the name of Dr. Sun as anathema. Dr. Sun's political intrigues and his railway schemes were two distinct and separate things. Dr. Sun is open to severe condemnation for permitting himself to be led into open hostility against the Government at a time when the reconstruction of the country, and the consolidation of power was imperative to save China from her enemies, at home and abroad. But after all, Dr. Sun was a Chinese official, placed in control of the greatest single development scheme ever conceived for placing China on her feet. The reputation of one high official reflects on all. If the stories of graft and corruption against Dr. Sun as the head of the Chinese National Railway Corporation are permitted to pass unchallenged, it is not Dr. Sun who will suffer, but the reputation of China itself. If Dr. Sun was honorable and upright in his financial transactions for the construction of railways, the world is entitled to know of it, as it will go a long way towards strengthening confidence in the general integrity of China's officials, and assist the Government in future negotiations. The financiers of Europe and America *know* that Dr. Sun's record was clean in the transactions of the Chinese National Railway Corporation, and it was due to the confidence and trust then created, which permitted the Government to secure immediate attention to a similar scheme when proposed a year later. Because Dr. Sun was weak and allowed himself to be inveigled into a rebellion against the President, does not justify attacks on his railway plans. A political murderer may be an honest man in business matters.

A sample of the unjust attacks on my personal work and character, appeared in a leading editorial in the "Shanghai Mercury" of April 1st last, when I was in London, and could not at the time readily defend myself owing to my official connection with the Ministry of Communications. In an unseemly haste to laud the merits of a British aspirant for the position of Railway Adviser at Peking, the editor of the Mercury could not resist the opportunity of discrediting my personal work, thus laying itself open to prosecution for libel, by the publication of a deliberate falsehood calculated to reflect on the honor and usefulness of myself. The writer of the editorial overreached himself in this particular instance as by its reflections on the Ministry it destroyed the last hope of Mr. Pope's appointment as Railway Adviser. Mr. Pope subsequently apologized to me in London for the editorial and assured me on his honor that he had absolutely nothing to do with its publication. As an interesting side light on the means employed to undermine the reputation and usefulness of an American in the employ of the Chinese Government, the editorial is herewith reprinted:—

MR. POPE'S APPOINTMENT.

We had the pleasure on Monday evening of being the first to announce the transfer of Mr. POPE to Peking, and though it was not then clear to what post he was to be appointed it was quite certain that it would be to some office in which his services would be of even greater and wider importance than they have been during the tenure of his office in Shanghai. The appointment is one to be welcomed from every point of view except that of Shanghai, which will miss his genial presence and his unfailing interest in local and especially philanthropic affairs. As far as the work of the Shanghai-Nanking Railway is concerned it will doubtless be maintained at its present high level by Mr. CLEAR, who is appointed Mr. POPE'S successor, and it may be that Mr. POPE'S appointment will enable him to move Peking to absorb a certain further degree of wisdom with regard to the development of the S.N.R. than Peking has been able to assimilate up to the present.

Apart from all personal consideration, however, the appointment is a welcome and a healthy sign of the times. In the early days of last December, it will be remembered, the Ministry of Communications published an advertisement which invited all and sundry to compete for a substantial prize of some thousands of dollars. The competitors were to send in within a month a scheme for railways throughout China, with maps and plans, and with full details of gauge, costs, and like matters, reasons why each line should be built, an estimate of the strategic, commercial and other values of each line, and a host of other interesting details. The advertisement made the Board of Communications the laughing-stock of the Far East, and the only sane conclusion that anybody who read it could come to was that either some underling in the Board had gone crazy or that somebody outside the Board was having an expensive joke. **That was the first impression, but within twenty-four hours Peking knew what was the underlying motive and purpose of the apparent folly. It was realized that the requirements of the advertisement could not be met except by somebody already thoroughly well posted up and with practically every detail ready for delivery; it was further realized that the preparation of such material as was required could only be undertaken with access to the fullest information, much of which was only to be found in Government dossiers; and it was not long before Peking grasped the fact that such information had all been carefully compiled and collected and systematized and organized by Dr. Sun's Railway Bureau. The conclusion was obvious: this advertisement had almost certainly been published by the Board of Communications, at the instance of somebody who had been in the employ of Dr. Sun, and had all the required information ready to hand. The short time allowed for the competition would enable some such residuary legatee of Dr. Sun to pass in his papers and secure not only the coveted prize, but also, possibly, the appointment of advisor to the Board of Communications. The appointment of Mr. Pope sets the seal on the final failure of that intrigue, and not only China but all interested in Chinese railway development may well feel thankful at the present announcement. The Board of Communications is most deserving of congratulation, for it has the double joy of knowing that it has secured a good advisor and has also rid itself of a widespread organized attempt to bring it under influences not by any means wholesome.**

Mr. POPE'S task will not be an easy one. Whilst some of China's railways are doing well, others are doing ill; whilst some are well organized, others are not organized at all. There is little co-operation between them. The prolonged negotiations for through booking between the Shanghai-Nanking Railway, the Tsin-Pu Railway and the Peking-Mukden Railway revealed the dire need of expert and independent advice and guidance in the Board. **The waste of time and energy that have been brought about by bringing an accountant from the United States to examine the various railway accounts in order to decide whether train oil were to be counted against upkeep of wheels or of axles, is another illustration. With a competent advisor in the Board it would have been easily possible to call a conference of, say, the three leading accountants, and these could have drafted a uniform method of accountancy. They would have done it in a little over a week, and at practically no cost to the Board.** These are examples in one direction of how such an appointment as that of Mr. POPE can be made readily effective for China's good. When he turns to other questions a big task lies before him. Half the railways in China are packed with "dead-heads," drawing "dry salary." These are the appointees, not of the managers of the railways, but of Tom, Dick and Harry in the Board of Communications itself. It will be a difficult, but doubtless an agreeable, task for Mr. POPE to get rid of these burdens on the railway development of the country. There are other problems just as serious to be tackled, and no doubt Mr. POPE will tackle them as far as lies in his power.

But there is the crux of the matter—"as far as lies in his power." The Board of Communications will simply stultify itself if it does not give Mr. POPE real power and authority, and does not accept his advice. If the Board only wants a figurehead, it might just as well have taken any schemer that came along, because it need not have taken his advice. Knowing Mr. POPE's character, we hope that the Board is cherishing no illusions. Mr. POPE is not likely to allow himself to become a figurehead merely. He will want to get something done; and we hope he will succeed.

The reference to myself is obvious to any one at all conversant with my work and movements. I was in Peking at the time the advertisement mentioned was printed in the native newspapers. The facts surrounding this rather remarkable announcement are still somewhat obscure. I may state that the various schemes submitted a year ago in answer to the advertisement of the Ministry, are still in the hands of an official appointed to pass on their merits, and no awards or decisions have yet been announced. It might interest the editor of the "Mercury" to know that a work in the French language on the "Railways of China," or a "Programme for their Development," was recently published at Peking, by A. J. H. Charignon, Technical Adviser of the Ministry of Communications. I merely mention this to invite the attention of the editor of the "Mercury" to the fact that I have had a similar work in preparation for some months, but have withheld its publication, until official action was taken on the competitive schemes already filed with the Ministry, so it would be possible for me, as the proprietor of The FAR EASTERN REVIEW, to render due credit to the successful competitor. Does the editor of the "Mercury" desire to be fair and just? Would he care to insinuate that M. Charignon in his capacity as Technical Adviser to the Ministry of Communications with access to the dossiers and the competitive schemes, has forstalled other competitors by publishing a program for the future development of China's railways? It is a fact that I personally submitted a scheme for a national system of railways, with a full exposition of the various lines from the strategic, political and commercial viewpoint, together with over a dozen large maps, but as it was in connection with an entirely different matter, I expressly stipulated that it should be considered as a departmental document, and in no event should it be entered in the public competition. After my resignation from the Ministry of Communications in September last, I was requested by an official of the Ministry to permit my scheme to enter the competition, and I then consented. M. Charignon's is the French Technical Adviser to the Ministry of Communications, and undoubtedly has access to the dossiers the editor of the "Mercury" refers to. The schemes submitted for competition over a year ago have not been passed on as yet, and in all probability never will be. It is certainly a fair question to ask what right had any foreign official of the Ministry to publish a work on a national scheme for the development of railways for China, when various competitive schemes have been in the possession of the Min istry for nearly a year, without action being taken on them. I have no desire to pass any reflection on M. Charignon's work. But, owing to his official position there is a question of ethics involved in the publication of his book, which if violated by an American, would have resulted in his being hounded from the Ministry by ever ready critics who lay awake at nights devising schemes to destroy the usefulness of every American in any Chinese Government position which bars the way to the successful prosecution of other national designs on Chinese railways.

It is only necessary to read the gratuitous and uncalled for slur on Dr. Adams and his work for the Unification of China's Railway Accounts, to grasp the fact that the attack is not a personal one, but part of a general policy to bring discredit on any American who has the presumption to interfere with the well laid plans of others for the domination of China's railway policy. For the Chinese Government to invite the services of the expert who had brought order out of the chaos surrounding American railway accounts, and whose ability is recognized all over the world, and who holds an honorable position on the Interstate Commerce Commission of the United States, rather than entrust this important task to Mr. Pope, was keenly resented by the "Mercury" and the interests it represents. Any American who dares to presume that he has any knowledge of China's railways or interferes with the set plans of others, is a participant in the alleged "*widespread organized attempt to bring Chinese railways under influences not at all wholesome.*" This remark is simply rank impertinence and a cowardly national libel on Americans. However, there is one American who has full and exact information as to the aims and policies of others, and who will take great care in the future to give the widest publicity to all designs on China's liberty of action in the control of her railways.

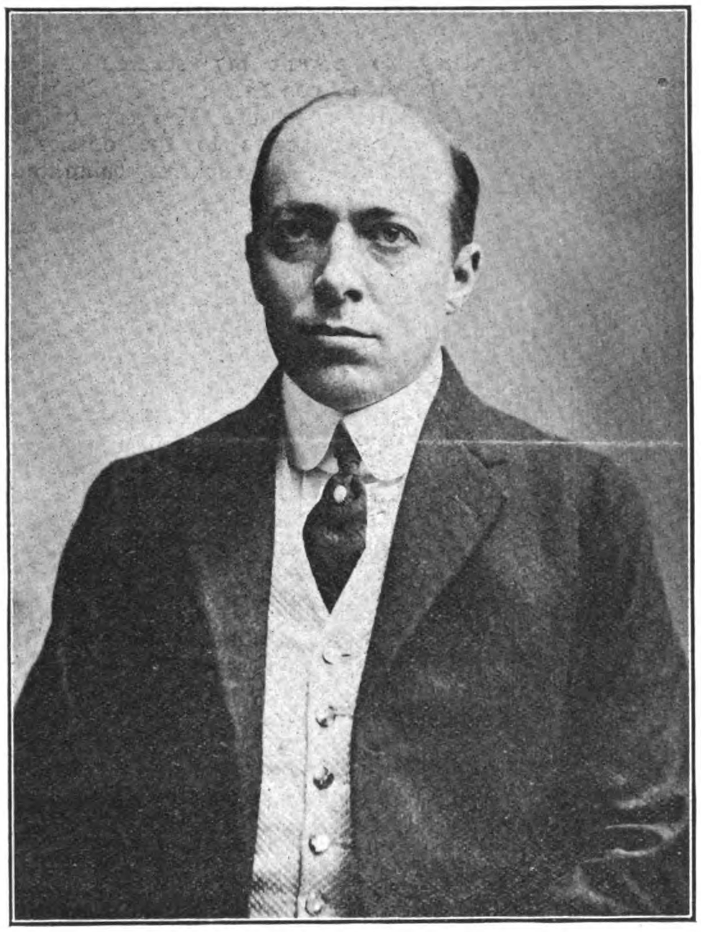
And now comes Mr. Srinivas R. Wagel, the Financial Editor of the "North-China Daily News," to heap further contumely on Dr. Sun Yat-sen and his railway program. "It is useless to refer in detail to Dr. Sun Yat-sen's schemes," says Mr. Srinivas R. Wagel; "his schemes were neither practicable, nor as later events proved, was it his intention to go on with the development of railways." "Very little was done by Dr. Sun Yat-sen and it

is very doubtful if he did anything in the way of promoting railways at all." Just as if Mr. Srinivas R. Wagel knew anything at all about the subject! What he did know was deliberately suppressed and no reference made to the fact that the one contract Dr. Sun did conclude went to the most reputable British railway construction firm.

AMERICAN COMMERCIAL ATTACHE FOR CHINA

MR. JULIAN H. ARNOLD

On July 15th, ult., the American Congress, acting upon the earnest recommendation of the Hon. William C. Redfield, granted an appropriation of $100,000 for "*Commercial Attaches,* to be appointed by the Secretary of Commerce, after examination to be held under his direction to determine their competency, and to be accredited through the State Department, whose duties shall be to investigate and report upon such conditions in the manufacturing industries and trade of foreign countries as may be of interest to the United States, and for one clerk to each of said commercial attaches to be paid a salary not to exceed $1,500 each; and for



Mr. Julian H. Arnold.

Promoted from the post of American Consul General at Hankow, to the newly created position of Commercial Attache at Peking.

necessary traveling expenses, rent, purchase of reports, travel to and from the United States, and all other necessary expenses not included in the foregoing. Such commercial attaches shall serve directly under the Secretary of Commerce and shall report directly to him."

As the appropriation was finally authorized, the Secretary of Commerce was charged with the duty of directing the examination of candidates, and he promptly approved a plan under which, through the cordial co-operation of the Civil Service Commission, those who seemed to possess the required training and the qualifications sought for were invited to present themselves in the various district centers where the Commission maintains examining boards, and undergo a written test, for which a rating of 50% in 100 was fixed.

This written examination involved the preparation of the candidate of several theses on subjects closely related to the work which is expected of the commercial attache when at his post. Methods of developing export trade, the difficulties of this commerce, banking conditions, the political history of foreign countries and similar subjects constituted a test of the range of the candidate's information and his readiness and originality of thought. He was also asked to write 500 words in French, German or Spanish.

Such of those who passed the written examination above the grade of 70%, and whose general record of education and experience seemed to justify further consideration for appointment, were then invited to appear before a committee composed of officers of the Bureau of Foreign and Domestic Commerce, the Civil Service Commission, and the Department of State. Under an oral examination in which the ability of the candidate to speak readily one of the foreign languages required was tested, his personality and other similar qualifications were rated, to form the remaining possible 50% of his marking.

As a result of this method of selection, six commercial attaches have already been appointed. Two consular officers, long in that service, with admirable records in trade promotion work, have been appointed by transfer from the Department of State, and one selection was made by similar transfer in the Department of Commerce.

The primary duty of the Commercial Attache is to learn to know thoroughly the country to which he is accredited. He is to know not only the capital or chief port but the back country and its small cities. He is to meet and learn the views of all classes of men, officials as well as business men, rich as well as poor, educated and the unthinking. Much of the information which he acquires will be merely educational, it will merely form the background for specialized studies. The entire mass of accumulated data will be placed at the disposal of the officers of the Government and of the business men of the country.

To attempt a detailed analysis of the functions of the Commercial Attache at this time would be valueless. In a general way, it is expected that he will act as the personal representative of the Department of Commerce, and hence, of the American business public, in his district. The Commercial Attache is the business diplomat.

He will report on trade and financial conditions generally. He will report on definite and specific opportunities for American manufactured goods. He will answer inquiries from American merchants and manufacturers, and from foreign merchants and manufacturers. He will seek out new markets for American products, and will bring them, through the Department of Commerce, to the attention of the American business public. He will study and recommend methods of increasing the trade relations between the United States and his particular district.

Nine appointments have been made under the new law. London, Paris, Berlin, Petrograd, Rio Janeiro, Buenos Aires, Lima, Santiago de Chile, and Peking have been selected as the most important posts to be covered, and the men assigned for service are fitted by past experience and special qualifications. It is particularly gratifying to see that the Secretary of Commerce has recognized the undoubted ability of Consul-General Julian H. Arnold, of Hankow, by appointing him as Commercial Attache at Peking. Mr. Arnold's reports on the trade conditions of the various ports in the Far East, where he has served as Consul or Consul-General, have been marked by a clear insight into commercial matters. We have followed his career year by year since 1904, when THE FAR EASTERN REVIEW was first published, and have reprinted many of his reports. His work in promoting American trade in China has been admirable and he fully merits the promotion conferred on him. Mr. Arnold entered the Consular service in 1902, as a student interpreter. He speaks Chinese fluently, and has travelled in all parts of China on special commercial studies. He has been stationed at Tamsui, Formosa, Dalny, Foochow, Shanghai, Chefoo and Hankow.

THE STEEL CORPORATION'S USEFULNESS

The prosecution of the United States Steel Corporation by the Federal Government may disclose to the satisfaction of a jury that the spirit of the anti-trust laws have been evaded, but it appears difficult to prove that any other American competitor has been seriously injured. In the summing up of the case against the Corporation by counsel for the Government on October 28th ulto., Judge Dickinson admitted that even if the Steel Corporation had done nothing unlawful after its organization, the Government would still have prayed for its dissolution on the ground that its formation was illegal. This then is the real point at issue, and it is only fair to assume, that such a huge combination of capital, received the highest professional advice in America as to the legality of its formation, and that the Government's attorneys interpret the law differently, and are bent on disintegrating the corporation into a number of competitive units. The records of the case failed to prove that any consumer or competitor had been unfairly dealt with by the Corporation or any its subsidiaries, and it was clearly shown that the Corporation was the one great instrument for the advancement of American export trade in steel products. Mr. Johnson in his defense of the Corporation predicted another war after the present European conflict is over, a war in which Germany will battle for the commerce of the world, and in which war the steel companies in America will be as pygmies if the United States Steel Corporation is disintegrated by the courts.

THE FAR EASTERN REVIEW concurs with Mr. Johnson's view, and can add, that the battle for the commerce of the world is not an event of the future. It is being waged even now. It is not Germany alone that American manufacturers will have to face; there are other commercial antagonists. The fight for supremacy is being waged relentlessly and despite the war, with unabated energy. As long as the battle is waged fairly, and American manufacturers are accorded equitable treatment they can hold their position, but if tactics now being pursued in China to gain the ascendency are followed up, it will not be long ere the door will be closed and a "no trespass" sign nailed up to warn Americans away.

The great commercial struggle for supremacy in the world's markets, has many phases. The butchery in Europe is only one of its high lights, temporarily diverting attention from the main issue. The toll of blood will be paid until one side or the other has enough. The real issue will then be resumed on the commercial battlefield until animosities created by rabid and greedy commercial interests will be revived and death and destruction will again be the temporary arbiter. The commercial campaign waged against Germany by Britain, and against Britain by Germany is typical of the rivalry between two private commercial competitors. When the competition of one formidable antagonist is effectively annihilated the trade rivalry will then be extended to the next powerful competitor. If it can be squashed pacifically, that is, diplomatically, or by waving the big stick, perhaps bloodshed can be averted. So whether the Allies or Germany are victorious in this bloody phase of the great world commercial war, matters little to commercial America, for in either event, America will be the next formidable competitor and must be prepared to meet the onslaught, peaceable at first, but waxing in intensity as her trade expands, until finally the invectives of a rabid press and the pressure of threatened interests brings on another debacle. The first period of the great commercial war of the future to which Mr. Johnson alludes is now being written in human blood and agony on the fields of Europe. It may be many years before the pages of history record the second period of the great struggle, but it is already written that the next object of attack will be America. Forces have been at work for several years to sow the seeds of discord and hate, and the tocsin against America has been sounded.

If Americans hope to hold their place in the sun, the Government would do well to give serious study to the framing of laws which will permit the combination of American manufacturers into powerful Corporations who can hold their own against the commercial strategy of their European opponents. Instead of wasting time in expensive proceedings to emasculate the one great foreign trading organization whose strength is America's greatest asset, it would seem that some laws might be enacted so that the Corporation could continue its foreign business along the lines so successfully pursued to date.

CENTRAL SUGAR FACTORIES IN THE PHILIPPINES.

After many years the Filipinos have awoke to the value of central sugar mills, as the only way to increase the percentage of extraction and secure the maximum profits from the industry. When the idea was first pointed out to them by reputable experts, all manner of objections were raised to the plan, and it was found impossible to secure adhesion to any practicable commercial scheme to permit of outside capitalists erecting centrals in any of the sugar districts. The fundamental requisite for the success of any central milling company, before capitalists will embark in the venture, is a plentiful supply of cane to permit the mill to operate continually, without having to close down every few hours from failure on the part of the farmers to deliver the cane. This can only be secured through a guaranteed contract. It is not alone sufficient that the farmer enters into a contract to deliver so many tons of cane, or the product of so many acres to the mill, but he must give a guarantee or bond for the faithful performance of his side of the contract. Otherwise there is no guarantee that the central sugar mill be a profitable investment, and at any time it might be compelled to close down or at least operate at half time, simply because the cane farmers have not lived up to a contract to furnish their quota of raw material. Unless such a guarantee is forthcoming, no sensible sugar capitalist would invest one cent in the shares of a central factory. The question always arises, where or how is the farmer to produce an adequate guarantee? As a rule the farmer is impecunious or without sufficient capital to faithfully carry out such an agreement. In practice, therefore, the central factory company agrees to lend a sufficient sum to enable him to cultivate and harvest a certain acreage, and as security takes a first mortgage on the lands. This is the only tangible security that can be accepted in such circumstances. The industrial life of the central factory is dependent on the product of a limited acreage, within a reasonable distance from its location. If the farmers agree to furnish a definite tonnage of cane, as a basis for capitalists to erect and operate the central factory, and fail to fulfill their agreement, or plant their lands to other crops, the factory will have to close down, or seek the raw product from distant producers, where the cost of transportation diminishes the customary profits. There are always many petty points of dispute between farmer and factory, and unless some iron bound, unbreakable link binds them, the farmer always has the opportunity of selling his crop elsewhere.

If a proper guaranteed contract can be entered into with the farmers, on a fair basis of payment for the cane, there is ample private capital willing to enter the field. Or if private corporations could control sufficient land to make a large central factory independent of the farmers, capital would be forthcoming.

We note the rather novel and ingenious plan of the Filipino planters to secure the erection and ownership of central factories by using Government credit. As we understand the bill proposed in the Filipino Assembly, a combination of planters in a given district, will guarantee to furnish cane to a central factory on the basis of 50 per cent of the product in sugar. The factory is to be erected by some firm of sugar machinery constructors, who will administer the manufacturing end, until the plant is fully paid for. The mill management will take as its share half the product, and the profits are to be assigned towards payment for the plant. The Government is called on to guarantee the cost of the central factories up to P. 8,000,000. When everything is paid the mill reverts to the combination or corporation of planters.

This is a most ingenious scheme to have the Government guarantee the honesty of the planters, and in effect pay for a central factory to be handed over to the combination as its individual property. If the Government is assured of the profitable nature of the enterprise, why should its guarantee be employed to benefit a

private corporation of planters? The farmers secure their legitimate profit from the sale of cane to the mill for fifty per cent of the product; a fair proportion. If they are honest and sincere, and willing to give the necessary bond for the continuous supply of cane, private capital would undertake the erection of the central plant without Government guarantee. As the Filipino planter refuses to abide by conditions accepted as indispensable in all other cane producing countries, and will not sign an acceptable security to abide by his contract to deliver cane to the central factory, he now turns to the Government to assume this responsibility for him, and in addition, asks the Government to hand over the mill to him when it is paid for. Why should the Government guarantee be employed to create a property worth at least $500,000 Gold, which ought to pay for itself in five years, and then hand it over to a combination of planters who have already received their legitimate profits from the sale of the raw product?

If the Government guarantee is extended to cover such a scheme, there is no reason why the Government should not remain in possession of the property, when paid for. The planters have contributed no funds, and are certainly not entitled to special favor from the Government. The precedent that Assemblyman Reyes of the Philippines would create, by the passage of his bill, savors strongly of "graft"

Or it may be taken as the Filipino solution of the guarantee problem for the erection of a central factory. They refuse to entertain any proposition for the faithful performance of their contract, but say in effect, we will not consent to any scheme which embraces our lands as a guarantee for the erection of a central, so the only way is for us to own the central. Bribe us to be honest. Make us a present of the central factory after it is paid for, then we will have some real incentive to live up to our obligation to furnish it with the cane our contract calls for. The Government will guarantee to outside capital that which we individually refuse to give; we will receive our legitimate profit from the sale of the cane to the mill, and then when it is paid for, the benevolent Government will hand over the property to us. It's a brilliant scheme—for the planters, and their legislative partners.

G. B. R.

ENGINEERING IN CHINA

EXTRACTS FROM THE ADDRESS OF MR. A. C. CLEAR, PRESIDENT OF THE ENGINEERING SOCIETY OF CHINA

The inaugural address of President A. C. Clear in taking the chair for his second term as head of the Engineering Society of China was marked by a deep and sympathetic insight into the development problems of China as a whole, and of Shanghai as its great commercial port of entry. Mr. Clear very briefly and ably summarized the engineering progress of the year, and the needs of Shanghai as a growing metropolis, and, in conclusion dwelt on a theme worthy of the deepest consideration on the part of Chinese officials and capitalists interested in engineering development. In the closing words of his address, Mr. Clear suggested a line of thought which if followed up, might prove of inestimable value to the country. Mr. Clear said:—

"I would remind you that we, Engineers, are the men upon whom the brunt of the actual work of development will fall, and when in the numerous proposals that spring up mushroom-like over the length and breadth of this great country, we see any real sign or hope of progress it is our duty not to submit these to that easiest of all, destructive criticism, but accept the harder task of selecting those proposals which are substantial and good, using all the influence we can command to construct from these something that will be of general benefit not only to this country but to the whole world.

"The world is now so closely bound with ties of easy inter-communication that the development of one country is bound to react on others. One of China's needs is to have an independent body of expert opinion to which important technical matters could be referred. Why should we not eventually supply this? In our International character lies the strength of any opinions advanced by us. Our steadily increasing membership of responsible engineers is a convincing proof of the value of the work being done and of the status of this society, whose animating principles are those of the great engineering institutions throughout the world, viz., the general advancement of the science and practice of engineering in all its branches."

If such an idea could be carried into practical effect, without fear of international jealousies or private commercial considerations cropping up from time to time, many problems now confronting China might be amicably adjusted with due regard to the interests of all countries. If a committee of this Society composed of broad minded engineers of various nationalities, could be selected to pass opinions on some of the knotty points continually arising, a better feeling might be engendered. We have in mind the propaganda of a very important association whose declared aim is to displace American and German technical and engineering advisers to the Chinese Government by those who will work for the attainment of the chief object of the Association. An analysis of its official literature indicates that the desired object is to have British engineering standards and specifications adopted officially by the Chinese Government. In other words Americans and Germans are to be ousted in favor of those who will advance the special objects of one national association. The propaganda has the stamp of official approval. The code of ethics governing the work of engineering societies the world over call for honorable and disinterested technical advice from any of the members employed in a consulting capacity. If the Chinese Government employs only engineering advisers who owe their position to the influence of one association, it goes without saying that the aspirant to the post will not receive its support unless he is in thorough accord and sympathy with the aims of the association, and pledges himself to further its propaganda.

In such matters the Engineering Society of China could materially advance the cause of China, and uphold the ethics of the profession by giving disinterested advice not only to the Chinese, but to those national associations at home who overlook the finer points of professional ethics. We have not the space to devote to a thorough exposition of this subject at this time, but hope to be able to present it in full at an early date.

Mr. Clear's able resume of China's engineering projects, unfortunately did not cover all the important works originated during the year, but was confined largely to those having a special bearing on the development of Shanghai. A high tribute was paid by him to the American engineers who conducted the recent survey of the Hwai River district for the American Red Cross Society. In this respect, Mr. Clear's remarks stand out in sharp contrast to the petty querulous criticisms and ill advised aspersions on American Engineers so prevalent in other quarters.

The opportunity afforded the Standard Oil company in the North China Oil Fields and the new mining regulations were cited as evidences that China is favoring the development of her resources.

Turning to railways, which loom largely in the development of the country, Mr. Clear said that at no period in Chinese history had so many agreements for their construction been completed as during the last twelve months.

The first in order of signature of Agreement was the Pukow-Sinyangchow Railway. This, together with the Shanghai-Nanking, the Shanghai-Hangchow-Ningpo and Canton-Hankow Railways was included under a Concession obtained by the British and Chinese Corporation in 1898, when a preliminary Agreement was entered into, upon the understanding that the final terms should await those of the Shanghai-Nanking Railway, and be drawn up similarly.

It was not until July, 1903, that the Shanghai-Nanking Railway Agreement was signed. It was then decided to construct the Tientsin-Pukow Railway before concluding arrangements for this cross country line, and not until 1912 were negotiations resumed. The agreement was signed on November 14, 1913.

"The survey is now clearly complete and construction work had actually commenced when war for the fourth time in this railway's history has put a temporary stop to further construction work. The line starts from Wu-I on the Tientsin-Pukow and connects up with Sinyangchow on the Peking-Hankow Railway, a distance of approximately 260 miles. The country traversed is a rich agricultural district with practically no other means of communication or of transport than that supplied by carts. China carts on Chinese road are, under the best of circumstances, a slow and unsatisfactory means of transport for goods, and for passengers, possibly painful might be added. In addition to a heavy grain traffic there are considerable coal deposits existing in the near neighbourhood of the line which may be developed to the benefit of the railway both from its own fuel supply and as an item of freight. There is every possibility that this railway will affect the future of Shanghai as it opens up a large tract of practically untouched country, and given better means of communication across the Yangtze at Nanking than at present exists for the handling of goods traffic in bulk, a great deal should find its way into our local markets."

The Nanking-Nanchang-Hunan Railway would connect with the Shanghai-Nanking Railway at Nanking and extend through Nanchang

joining the great Canton-Hankow trunk line either through Pingsiang at Chuchow or possibly direct with Changsha. The line would traverse Anhui and Kiangsi, provinces rich in agricultural produce and in minerals, particularly in coal. The agreement for this Railway was signed on March 31 of this year and the preliminary survey work had recently been started. The length of the main line is approximately 650 miles.

One small railway which amongst its mightier brethren might easily pass without notice but would be of considerable local importance was the junction line at present being surveyed between the Shanghai-Nanking and Hangchow-Ningpo Railways.

This small junction would overcome some of the disadvantages under which the Shanghai-Hangchow-Ningpo Railway was at present labouring, more particularly with regard to the terminal station at Shanghai. The present difficulties attending the transport of goods by this route afforded a good illustration of similar difficulties to be overcome in the transport of goods from the interior to the coast.

"From the Yangtze through the Poyang Lake and a magnificent series of waterways runs one of the great trade routes. Waterborne traffic on this route is interrupted at Yushan by a range of hills marking the border line of Kiangsi and Chekiang provinces. These hills necessitate a laborious carry over of some 30 miles to Changshan where boats are again requisitioned to convey the produce another stage upon its journey down the Tsingtong River to Hangchow. There the trade route diverges to Soochow, Wusieh, Shanghai and other towns. The great sea wall which runs unbrokenly from below Hangchow to the sea, whilst forming a barrier to hold the salt water of the Tsingtong river in check, obtrudes another obstacle to the transport of waterborne cargo proceeding inland. Goods are, therefore, once more discharged, and prior to the building of a railway, were loaded again into boats which literally fought their way through the narrow waterways of the city to the more open waters of the Grand Canal. This passage through the city was still further complicated by boats laden with produce from the towns previously mentioned, coming in the opposite direction. Knowing the "each man for himself" tactics of the Chinese boatman and the persistent power of his boathook, the wonder is, not that this short journey through the city of seven miles took one month for its accomplishment, but, that it was ever accomplished.

"To obviate this delay a Railway was constructed from Zahkow on the Tsingtong River to Konsenchiao on the Grand Canal to serve as a carry over between the two waterways and is now very fully occupied in the transport of native goods

"The railway known as the Shanghai-Hangchow-Ningpo Railway was connected to this short carry over piece of line, but owing, as previously stated, to the unfortunate position of the Shanghai terminus station, a very small proportion of the goods traffic is rail-borne to Shanghai. The junction line now being built will tend to remedy this objection by bringing the goods into closer touch with the markets of Shanghai."

A short line similar to that from Zahkow to Konsenchaio was also projected on the borders of Chêkiang from Yushan to Changshan. The boats would be better off eventually than they had ever been by acting as feeders to the railways and instead of doing a few long laborious trips each year, often under heart-breaking conditions, with interminable delays, many short trips could be made that would pay much better. Such combination of waterways and railways would result in ideal transport facilities."

Mr. Clear unfortunately omitted any reference to the important British railway contract for the Shasi-Singifu line, which will cons itute the Western link in a great all British trunk line, from the sea at Shanghai to the provinces of Kweichow and Yunnan. Connecting at Changsha with the Nanking-Nanchang-Hunan line, the Shasi-Singifu Railway will serve as a very valuable feeder to the former and exert a great influence on the future of Shanghai.

WILLIAM WOODVILLE ROCKHILL.

While on his way to report to President Yuan the results of a confidential mission confided to him in April last, death overtook Mr. W. W. Rockhill at Honolulu. His loss will be keenly felt by China whose cause found in him a true and sympathetic friend and advocate. Americans will have special reason to regret the loss of his influence in Far Eastern Affairs, especially as concerns China, in which country he has always manifested a keen interest, and whose welfare and happiness was very close to his heart. At the time of his death he was personal Adviser to President Yuan, who learned to esteem and admire his work and character during the many years the two officials were thrown into intimate diplomatic association.

It was chiefly through his efforts that the United States Government released the huge portion of the Boxer Indemnity legally due to her, whereby the Chinese Government was able to establish the Tsinghua College which is now yearly sending so many Chinese students to be educated in America. The good influence that these students are wielding and will continue to wield in the shaping of the country's future, is immense, and for this and other reasons, Mr. Rockhill will be gratefully remembered by the thinking men of China.

The late Mr. William Woodville Rockhill was born in Philadelphia in 1854. He graduated from the Military School of St. Cyr, France, and served three years as lieutenant in the French Army in Algeria. He was appointed Second Secretary of the American Legation in Peking on April 9, 1884; Secretary July 1, 1885; Chargé d'Affaires *ad interim* at Seoul from December 11, 1886, to April 3, 1887; left Peking on leave April 2, 1888; resigned in the United States July 5, 1888, to take effect on expiration of leave; two scientific missions to China and Tibet under the auspices of the Smithsonian Institution, 1888-92; appointed Chief Clerk, Department of State, April 14, 1893; Third Assistant Secretary of State, April 14, 1894; delegate to the International Congress of Geography, London, 1895; Assistant Secretary of State, Feb. 1896; resigned May 10, 1897; appointed Envoy Extraordinary and Minister Plenipotentiary and Consul-General to Greece, Roumania and Servia, July 8, 1897; Envoy Extraordinary and Minister Plenipotentiary to Greece, Roumania and Servia, May 25, 1898; resigned May 19, 1899, on appointment as Director of the International Bureau of the American Republics; granted leave of absence July 20, 1900, to proceed to China as Special Commissioner of the United States; appointed Plenipotentiary on the part of the United States for the settlement of the Boxer troubles Feb. 24, 1901; signed the final protocol Sept. 7, 1901; resumed duties of Director of the International Bureau of the American Republics, October 24, 1901; resigned March 7, 1905; appointed Envoy Extraordinary and Minister Plenipotentiary to China March 8, 1905; designated Ambassador Extraordinary to represent the United States at the funeral ceremonies of His Majesty the Emperor of China, April 24, 1909; appointed Ambassador Extraordinary and Plenipotentiary to Russia, May 17, 1909; Ambassador Extraordinary and Plenipotentiary to Turkey, April 24, 1911; successor appointed September 4, 1913.

In April of this year he was appointed Adviser to President Yuan Shih-kai, and departed shortly afterwards on a special mission abroad.

Mr. Rockhills's Last Speech

Just before his departure on his last journey Mr. Rockhill made a splendid address before the members of the Asiatic Institute, at a dinner in his honor held at the Century Club in New York on November 12th. This notable speech, his last public utterance, is of supreme interest to all Americans, and others concerned in the maintenance of the Open Door, and the peace of the Far East. It demonstrates that although the Administration now directing the affairs of America, has sidetracked American interests in the Far East, there are those who are keeping a watchful eye on the rapid succession of events which are slowly but nevertheless surely and effectively undermining her position and nullifying the spirit of the Open Door. The day must come when secret diplomacy will be compelled to face exposure and judgment before the bar of American public opinion, and when the natural and rational deductions are made from a presentation of actual facts, there will have to be a readjustment of conditions. Therefore Mr. Rockhill's last speech possesses an added interest at this time, and is reproduced in full.

"Gentlemen: I deem it a great honor and an exceptional piece of good fortune that you have been so kind as to invite me to meet the members of the Asiatic Institute this evening and that you should permit me to address you on a topic in which you and I are keenly interested; that of the relations of China and the United States.

Among the objects of the organization of the Asiatic Institute was the "establishment of the study of Chinese progress and reforms, and the contribution by the co-ordination of American activities to the resolution of questions arising in Eastern Asia from the contact of different civilizations."

During the last six months I have had the honor of submitting to the Institute in three reports the general results of a journey which I undertook during last winter and spring through the Chinese Empire, a journey which led me to Urga, the capital of autonomous Outer Mongolia, to Harbin, the center of Russian influence in Manchuria, to Mukden, the headquarters of Japanese

activities in the southern part of the same region, and thence, by various slow stages, to Canton in the south.

In these reports I endeavored to give an impartial view of present conditions, both political and economic, to indicate the difficulties the government has had to meet and must meet in the future in its efforts to establish order and successfully adapt to the peculiar wants of the nation the methods of modern administration and material development. I referred to the present condition of the people, and noted, with apprehension for the future of representative government, the absence of public sentiment, and I called attention to the universal hope for the establishment of a strong centralized government and the creation of an efficient and honest administration.

The conclusions I then reached were that, under the guidance of President Yuan Shih-k'ai, a strong centralized government was being established and that he was endeavoring with his well known vigor and determination to create a good administration. Since then nothing has occurred to shake my belief in his determination to bring about this wonderful change.

Mistakes will be made, experiments will fail, criticism, not only of the men but of the methods they employ, will be frequent and violent in China and out of China, but with it all the modernization of Chinese life, social, political, and economic, will go on, and will, it is believed, ultimately create a stronger, richer, and let us hope, freer and happier country than in the past.

In the meanwhile I agree with President Eliot in thinking that "the Western world ought to stand by China with patience, forbearance, and hope, while she struggles with her tremendous social, industrial, and political problems."

PROGRESS OF AMERICAN INFLUENCE.

Let us turn now to the interest of the United States in the progress and reforms of China. Though the opening of our relations with China in the latter part of the eighteenth century was solely for purposes of trade, in the first half of the last century our missionaries began their establishment in the country and rapidly acquired the well merited friendship and confidence of the people by the excellence of the education they were able to give the children. Thus it was that the United States began the modern educational movement in China.

In the Sixties, Chinese who had received their early education in missionary schools began coming to the United States to complete it here. In 1871 the Viceroy of Chihli, Li Hung-chang, sent a Chinese Educational Mission to the United States with thirty very promising lads to be educated in this country. This proof of the trust placed in the United States by China was welcomed by us at the time, and both the government and the people of this country accepted it with gratitude, moved by humanitarian, idealistic, or more practical reasons, but all seeing in it a way to extend our culture and our influence in China, an opinion which years have confirmed, as our educational interests among the Chinese have grown.

And so we went on for years, dividing the attention we bestowed on China between trade, proselyting, and education, trusting for the maintenance and extension of our interests in the country to the most favored nation clause of treaties, and to the advantages we could now and then derive indirectly by the forceful means then frequently had recourse to in China by other nations, the so-called "Gunboat Policy," and to the purity of our intentions.

ERA OF ENCROACHMENT.

With the war between China and Japan which broke out in 1894 a new era opened, that of rapid encroachment on China by its powerful neighbors. For political as well as commercial reasons they sought to partition the Empire among them by the creation of spheres of influence, the securing of strategic bases, the building and operating of lines of railway, and the acquisition of vast and ill-defined concessions over the whole face of the land. It became apparent to the United States that if it did not take measures to check the movement its trade would be wiped out, its religious and educational interests restricted, and its influence and prestige with the Chinese reduced to naught.

In 1899 the administration at Washington put into practical shape the suggestions then being made by various British writers and statesmen in favor of securing to the commerce and navigation of all nations in China equality of treatment within the so-called "spheres of influence," in other words, the maintenance of what is called the "Open Door" policy.

You recall the result of the negotiations entered into in 1899 between our government and the various Treaty Powers directly interested in the question. They all accepted the proposals made by the United States, some in a whole-souled way, others with reluctance, others, again, with mental, or even verbal reservations, but, notwithstanding this, the Open Door policy became an acknowledged part of the general policy of the Treaty Powers in China with the United States as its guardian. This was the first, and it has turned out to be the only, successful attempt which has so far been made to initiate a general understanding, a common action of all the Great Powers having interests in the Far East, affording a means of settlement of pending questions, while recognizing all legitimate interests, and rights.

U. S. STRONG FOR OPEN DOOR

The value of the Open Door policy was not solely in the protection it afforded trade and navigation, it had an important political side; it was a powerful weapon for protecting China's integrity, for preserving her independence. This side is shown by our action during and after the Boxer troubles in 1900. In the words of Mr. Hay, our then Secretary of State, "The policy of the United States is to seek a solution which may bring about permanent safety and peace to China, preserve Chinese territorial and administrative entity, protect all rights guaranteed to friendly Powers by treaty and international law, and safeguard for the world the principle of equal and impartial trade with all parts of the Chinese Empire."

Admiral Mahan has clearly stated the same conception of its scope when he said that "the Open Door, to be beneficially effective, demands evident security of maintenance, freedom from disturbance, under the balance of forces applicable in the Pacific in general, and in the Western Pacific in particular."

In the face of considerable difficulty and of not a few attempts on the part of sundry Powers to evade the faithful performance of the promises they had given us, we struggled manfully for five years for the maintenance of the Open Door in every corner of the Chinese Empire, even though in so doing we may have temporarily strained the good relations we always wish to maintain with the whole world.

During the Russian supremacy in Manchuria our trade in that region reached the high tide of its development, but so popular had become among our people the Policy of the Open Door that it was held with the Monroe Doctrine as a declaration of national policy, and so they gave sympathy and even financial support to the Japanese when, in 1904, they went to war with Russia after the latter's refusal to agree to their demands, the first of which was "mutual engagement to respect the independence and territorial integrity of the Chinese and Korean Empires, and to maintain the principle of equal opportunity for the commerce and industry of all nations in those countries."

JAPAN'S PLEDGES OF GOOD FAITH

In 1905, before the Russo-Japanese war was over, Japan renewed her treaty of alliance with Great Britain, one of its objects being "The preservation of the common interests of all Powers in China by insuring the independence and integrity of the Chinese Empire and the principle of equal opportunities for the commerce and industry of all nations in China."

Not content with these pledges of its good faith in regard to the policy of the Open Door in China, Japan, in 1907, pledged herself again to it in an agreement with France, and yet again in 1908 to the United States. In this case it was furthermore agreed that for the defense of the Open Door Japan would, after agreement on the measure, join with the United States whenever occasion might arise in supporting "by all pacific means at their disposal the independence and integrity of China and the principle

of equal opportunity for the commerce and industry of all nations in the Empire."

Japan had taken the place of the United States as guardian of the Open Door in China, and become its chief exponent.

There is absolutely no doubt that in southern Manchuria British and American trade have been steadily declining since that part of China passed under Japanese control, nor is there any doubt that it has been in a great part driven out by Japanese competition supported by preferential customs and railway rates, shipping bounties, and successful resistance by its traders in Manchuria to paying China's internal taxes. Twelve years ago the American piece goods trade held the market of Manchuria; to-day, out of a total trade in cotton piece goods alone of about twenty-four millions, our share is less than three millions, all lost to Japanese manufacturers. The greater interests of Great Britain and France in other parts of the world caused these countries to sacrifice their trade interests in China, to give a free hand to Japan in economic matters.

As to America, the protagonist of the Open Door Policy, it let pass out of its hands the duty and responsibility of maintaining it, and the honor of retaining the commanding role in the affairs of the Far East which would have been ours. Before, however, retiring from the scene of activity in China our government, in 1909, made one more attempt to maintain the policy of the Open Door and justify the expectations of the discoverers of the panacea called "Dollar Diplomacy," by securing American financial participation in several important loans which the Government of China was seeking to negotiate with various foreign banks.

PERMANENT MORAL BENEFIT

I will not dwell on the stirring incidents which marked the fleeting appearance of America in the field of finance and politics in China, but I cannot pass it by without mention of the permanent moral benefit it brought us, the practical assistance it rendered China, while it lasted, in defending her rights and interests, and the profound regret of China and her friends, when, moved by idealist views and imperfect information, the present administration at Washington saw fit, in the spring of last year, to withdraw its support from the American banks.

While declaring that "our interests are those of the Open Door, a door of friendship and mutual advantage. This is the only door we care to enter," it declined to take a step to show the one or to secure the other. I only know of one blow equally heavy which has been dealt our interests, our prestige, and our influence in China; it was the cancellation, in 1905, of the concession of the American-China Development Company.

Let us look now at our present relations with China, those arising out of the political situation created by the extension of the operations of the European war to Chinese territory.

When war broke out in Europe the Government of China was among the first to declare its neutrality and to issue a proclamation in accord with Western precedents for the enforcement of the strictest neutrality, and this was at once put into effect.

Recalling furthermore the action of the American Government when war broke out in 1904 between Russia and Japan and when it had got the neutral Powers to join with us in asking the belligerents to limit the area of war operations in China to Manchuria, and had thus been the direct means of sparing China much loss and great expense, the Government of Peking took the additional step of asking the Governments at Washington and Tokio to use their good offices in preventing hostilities being carried out in the Far East. Tokio replied that the time had not yet come for such action, and Washington, while agreeing to the general desirability of such limitation, did nothing.

Then came the entry of Japan into the war for the purpose of capturing and eventually returning to China the powerful fortified naval base built by Germany on territory which China had leased it in 1898 "to strengthen the bonds of friendship which unite the two countries, and to develop the economic and commercial relations between the subjects of the two States," and which Japan and the Powers of the Triple Entente, and possibly not a few other Treaty Powers, had come to consider in German hands a standing menace to the peace of the Far East.

CONFLICT EXTENDED TO CHINA

The action of Japan was taken after consultation with Great Britain, and, inferentially, with the approval of France and Russia, and Great Britain sent a small force of troops and some ships to participate in the Japanese attack, thus binding itself equally with Japan to the faithful performance of its pledges.

Hostilities between Powers with which China entertained the closest and friendliest relations on territory over which by the terms of China's agreement with Germany she still had "all rights of sovereignty" and on which fortifications had only been allowed to be erected by Germany for the purpose of "increasing the military readiness of the Chinese Empire," was on their part a most flagrant breach of neutrality, but China could not prevent it, she had, perforce, as humiliating as the admission must be, to accept the inevitable.

A proclamation limiting the area of military operations to a certain zone was issued, and steps taken to enforce it, but violation after violation of her neutrality by all the belligerents have followed, and each has protested to China for her remissness, and China in turn has protested at each offense of the combatants. Kiaochau has now fallen, and we may, I think, rest assured that the pledges of Japan and Great Britain will be kept and that the integrity of China will not suffer. The best interests of China have been served by the military operations in Shantung having been vigorously conducted on both sides and promptly brought to an end.

The question of Chinese neutrality, or rather China's power effectively to enforce it, is one which deserves sympathetic attention and friendly assistance in settling, for under the régime of extraterritoriality, of international settlements, concessions, leased territories, railway zones, etc., etc., in none of which is China able to fully enforce its laws and orders, it is impossible that the Government can discharge its duties of neutrality, and inconceivable that it should be held strictly responsible for their performance.

DISREGARD CHINESE SOVEREIGNTY

The disregard of Chinese sovereignty and neutral rights by Treaty Powers in China within the settlements, concessions, and in other places in which they have acquired, or claim, certain privileges, are innumerable in the past, and the present war is but adding largely to the already formidable list. It is sincerely to be hoped that on the termination of the present war the Treaty Powers in conjunction with the Chinese Government may devise adequate means to improve China's situation in this respect; for the time being there seems nothing more to be said or done.

The withdrawal of the naval and military forces of the belligerents from China happens at a period when the internal condition of the country is still unsettled; when notwithstanding the energetic measures the Government is taking, not only to keep its neutrality but to preserve the internal peace of the country and to protect foreigners and their interests, there is constant apprehension, if not actual danger, of internal troubles and disturbances. These conditions may create, probably have already created, a sense of insecurity throughout not only the foreign communities in China but among the Chinese themselves, which it is easy to understand, and which imposes, it seems to me, on those Treaty Powers which have fortunately been able to remain neutral, and which usually maintain naval and military forces in the Far East, the clear duty of supplying this deficiency, and thus assuring a fair degree of protection to foreigners and, at the same time, assisting very materially the Chinese Government in effectually carrying out its present very onerous and difficult duties. Among the neutral Powers which could and should take over the discharge of this duty the United States stands first.

I have not heard that our naval forces on the China Station have been increased or that we have taken any steps to fulfil this duty. I can but trust that the necessity of the case has been appreciated and adequate measures adopted to discharge our obligation.

In conclusion, it seems clear to me that so long as we shut our eyes to the undoubted fact that, in the East at least, from Stamboul to Tokio, politics, finance, and trade go hand in hand,

and that neither the profits of trade can be fully reaped nor our influence and prestige be adequately upheld without incurring the responsibilities incident to political and financial activity, we must be content to play a modest, effaced role in the Far East, unworthy, in my opinion, of our great country and its vast interests in the Pacific.

PHILOSOPHER AND FRIEND

The role of philosopher and friend of the Chinese is left us. China still looks to us as able to give her youth the education best suited to prove of benefit to them and their country. It must be a source of genuine satisfaction to us to know that a large majority of the Chinese reared in our missionary educational establishments and in this country have shown themselves in after life well-balanced, useful men. Not a few of them have risen to the highest offices of the State, or become eminent in the professions which they have chosen.

Some, it is true, of less poise and of more emotional temperaments, carried away by the enthusiasm of youth and the novelty of the flights and fancies of the teaching in our most advanced schools of political thought, failing utterly to recognize tremendous difficulties and the length of time which the the change of China from the oldest hereditary autocracy to a constitutional, representative democracy must require, have foolishly tried to force the pace of reform and change in China.

They have failed, as was to be expected, but the responsibility for their rash and foolish actions must partly rest on us, who have not always recognized the full extent of our self-assured duty in educating Chinese who were all to become important factors in the upbuilding of their country, and who have often, both in our public press and elsewhere, given encouragement to the mad schemes and impossible theories of these misguided and trusting enthusiasts.

INTEREST CANNOT CEASE.

A serious responsibility also rests on us as regards those who, trained under our guidance, have attained eminence in public or business life; our interest in them cannot cease when they leave our colleges. If we would discharge faithfully our trust we must follow them in after life so that they may always feel that friendly assistance and honest, impartial advice or criticism is sure to be found and given whenever they require it or whenever we think they should have it.

China, in confiding to us the education of an ever increasing number of her youth, has believed in the genuineness of our promise, in our willingness to discharge our trust to the full. She looks to us to teach her youth to be sane, useful men and to steer them clear of the pitfalls of democracy, the vaporings of doctrinaires, and not to withdraw our interest from them in after life, but to encourage and give our constant moral support to them and their country in its efforts to follow the paths we have shown them.

I have endeavored to touch on some of the most salient features of our relations with China; there is nothing to be particularly ashamed of in them, though we have not always been fair in our dealings with her. Our trade has greatly increased as years have rolled by, though this increase has not been maintained as it might have been if we had continuity in our foreign policy and realized to the full our great opportunities, with, of course, accompanying responsibilities, which we have in the Pacific in drawing closer and closer our relations with both China and Japan. It is to assist in the attainment of this end that the Asiatic Institute was founded; may it accomplish to the full its great and patriotic object.

THE SPLENDID SPIRIT OF THE SAMURAI

Last month several aspects of the situation created by the surrender of Kiaochou to the Japanese were considered, but the recent important announcement by Baron Kato, the Japanese Minister for Foreign Affairs, has created an entirely new situation and consequently it seems desirable to devote a little more attention to the subject. Baron Kato in this speeh, in reply to an inquiry by Mr. Ogawa in the Imperial Japanese Diet said, *inter alia.*—

"I understand that what Mr. Ogawa means in his permanent solution of the Chinese question *is to secure the maintenance of China's territorial integrity.* This policy has been followed by the Japanese government since many years ago and the present ministry does not intend to diverge from this fundamental line of policy. Though Mr. Ogawa asked whether the government is going to restore Tsingtau to China or not yet the question is to be settled in the future and I am not in a position to give any definite reply to this question.

"Mr. Ogawa then inquires if the government has entered into any contracts with a foreign country, which contract might compel Japan to restore Tsingtau to China in any way. But I assure you that the government has never entered into such a contract with any foreign countries about the question of Tsingtau. The reason for which the government in its ultimatum requested Germany to restore the leased territory to China is just similar to that for which years ago the three powers jointly requested Japan to restore to China the Liaotung Peninsula which Japan had occupied during the China-Japanese war. Mr. Ogawa said that if Germany accepted the Japanese ultimatum, the result would have been rather difficult for Japan, because there is a special contract between Germany and China as to the restoration of Tsingtau to China. But as you may know from the terms of the government's ultimatum to Germany our intention was to cause Germany to restore Tsingtau to China without any conditions or compensations whatever."

Naturally enough the somewhat ambiguous wording of this utterance excited considerable discussion. Those who regard Japan's actions with fixed suspicion seized upon this enunciation of policy as a proof positive that she had harboured designs inimical to China's interests from the outset. It is well to consider what ground they may have for this belief and in order to understand thoroughly the position it is desirable to revert to the circumstances as they existed prior to the war and the subsequent developments up to the time of Baron Kato's last pronouncement which was made on December 9.

By the terms of the Anglo-Japanese Alliance the countries bound themselves to assist each other in maintaining the peace of the Far East. As Germany possessed in Kiaochou a naval and military base considerable curiosity was manifested as to whether she would elect to make some arrangement with China, send her ships out to fare as best they might, and convert her military forces into civilians for the period of the war, requesting China to undertake the protection of the leased territory. Action such as this, if taken while there was still time, would undoubtedly have saved much loss of life and obviated the present difficult problem. It is said that pourparlers with a view to some arrangement such as that outlined above were actually in progress when Japan presented her ultimatum on August 15. This momentous instrument read as follows :—

"We consider it highly important and necessary in the present situation to take measures to remove the causes of all disturbances of peace in the Far East and to safeguard the general interest *contemplated by the agreement of Alliance between Japan and Great Britain in order to secure a firm and enduring peace in Eastern Asia,* the establishment of which is the aim of the said agreement. The Imperial Japanese Government sincerely believe it their duty to give advice to the Imperial German Government to carry out the following two propositions: Firstly, to withdraw immediately from Japanese and Chinese waters German men-of-war and armed vessels of all kinds and to disarm at once those which cannot be so withdrawn, and secondly, to deliver on a date not later than September 15 to the Imperial Japanese authorities, without condition or compensation, the entire leased territory of Kiaochou with a view to the eventual restoration of the same to China. The Imperial Japanese Government announce at the same time that in the event of their not receiving by noon, August 23, 1914 the answer of the Imperial German Government signifying unconditional acceptance of the above advice offered by the Imperial Japanese Government, they will be compelled to take such action as they may deem necessary to meet the situation."

Considerable speculation was caused by the use of the word "eventual" in the reference to the return of the leased territory to China. Those who distrusted Japan pointed out that the expression was so indefinite as to render the pledge or undertaking almost valueless. However, the majority thought that in all fairness Japan should be given a fair opportunity to show that she intended to act in perfect good faith and not to seek to evade her self-imposed obligations by verbal straw spliting. More especially did this opinion prevail in America in consequence of the publication in the "New York Independent" of the following message from Count Okuma, the venerable Prime Minister of Japan:—

"I gladly seize the opportunity to send, through the medium of the "Independent," a message to the people of the United States, who have always been helpful and loyal friends to Japan. It is my desire to convince your people of the sincerity of my Government and of my people in all their utterances and assurances connected with the present regrettable

situation in Europe and the Far East. Every sense of loyalty and honour oblige Japan to co-operate with Great Britain to clear from these waters the enemies who in the past, the present and the future menace her interests, her trade, her shipping, and her people's lives. This Far Eastern situation is not of our seeking. It was ever my desire to maintain peace, as will be amply proved; as President of the Peace Society of Japan I have consistently so endeavoured. As Premier of Japan, I have stated and *I now again state to the people of America and of the world that Japan has no ulterior motive, no desire to secure more territory, no thought of depriving China or other peoples of anything which they now possess.*— OKUMA."

We find, then, that the reason assigned for Japan's participation in the military operations in the Far East was her obligation to Great Britain under the terms of the Alliance. But the Alliance also pledges the signatory powers to *the preservation of the territorial integrity of China*, and consequently we naturally find Japan in her ultimatum voluntarily pledging herself to return Kiaochou to China in the event of Germany surrendering the protectorate without fighting. It is perhaps worth while noticing in passing that some of the baser Japanese newspapers have taken the fine point that Japan's undertaking to return the territory was dependent upon its peaceful surrender by Germany. Papers such as the "Japan Times" and the "China Weekly Advertiser," both of which enjoy a semi-official status, have very correctly pointed out that it would be a disgrace to Japan to attempt to evade her obligations on a point that might appeal to a fourth rate police court solicitor, but to no one else. To continue. Not content with letting the ultimatum itself proclaim the correctness of Japan's motives, the Prime Minister, Count Okuma, telegraphed a message to the American people reaffirming that Japan had no ulterior motive, no desire of securing more territory and no thought of depriving China or other peoples of anything which they now possess. Up to this stage it must be admitted that no possible fault could be found with Japan's attitude. She voluntarily gave assurances to the world that she would not take advantage of the situation created by the war to occupy permanently any portion of Chinese territory, though the terms of her alliance with Great Britain rendered any such pledge supererogatory.

Germany, as was generally anticipated, decided not to surrender Kiaochou without a struggle. With the purely military operations we have no concern, but as political questions became involved they have to be noticed as they have a direct bearing on the main problem. One arose immediately Japan made preparations to land troops at Lungkow. China, while protesting against any infringement of her neutrality, recognized the logic of the situation by offering to declare a war zone, as was done in regard to the Russo-Japanese War. These limitations did not suit Japan, who let it be understood that she would take what action she deemed to be necessary to ensure the success of the military operations. China, with admirable restraint, contented herself by formally protesting when the Japanese military authorities laid a line of light railway for the transportation of stores and munitions to the front and committed other acts which it was considered were justified by military necessity. While the Chinese Government placed its formal protests on record it very wisely went no further and allowed Japan to develop her plans unmolested as far as China was concerned. The British troops who took part in the investment of Kiaochou landed within the leased territory, but it is only fair to Japan to remember that their debarkation was only rendered possible by the preliminary occupation of the locality by the Japanese forces which had crossed from Lungkow. The occupation of the Shantung Railway as far West as Weihsien elicited another protest from China, but Japan again claimed that her action was dictated by military necessity and eventually occupied the whole length of the line to Tsinanfu. It is not our object to discuss whether Japan was right in her contention that her admitted violation of China's sovereign rights were rendered necessary by the military problem with which she was faced. But it must again be emphasised that China deserves well of the world for the calmness she showed under conditions which were sufficiently irritating and which induced in quarters in which China's military weakness is not apprehended a demand for vigorous action. The Chinese Government was faced with the position that to take action would be fatal while to take no action might cause serious discontent among the people of Shantung in particular and afford an opportunity for revolt to those elements of the Chinese body politic which are always on the lookout for an opportunity to fish in troubled waters. By dignified protests which never went to extremes China justified herself in the eyes of the world and reassured the better elements among her own people.

It was not until after the unconditional surrender of Kiaochou that the question of the future disposition, or to be strictly accurate the immediate disposition, of the leased territory became a subject of active discussion. It speedily became apparent that although Great Britain had taken part in the military reduction of the fortress, her arrangement with her ally did not demand a share in the civil administration after its inevitable fall. Consequently the question is one between China and Japan. The surrender of the fortress took place on November 1, and it is noteworthy that the expressions of opinion by the two semi-official Japanese newspapers referred to earlier in this article were made AFTER and not before this event, thus showing that actual possession had not modified the previously expressed intentions of the Government. But then came Baron Kato's statement in the Imperial Diet on December 9 which has caused much apprehension in various quarters and which must be admitted by those most friendly to Japan to be at least ambiguous.

The explanation we believe to be simple. Those who know anything about Japan's domestic politics know that the Cabinet is unfortunate enough not to be able to rely upon a majority in the Diet. Japan, though owing to the prescience of the late Prince Ito she has made political haste slowly, has within the last year or two developed the party system on the lines that obtain in other countries with representative institutions. In former days it was a matter of no consequence whether the Cabinet had a majority in Parliament or not as it was solely responsible to the Emperor. An adverse vote was purely of academic interest and no Prime Minister felt it incumbent upon him to resign simply because the Parliament did not endorse his policy. All that is changed, and now no Cabinet would dare to attempt to carry on unless it had the support of the people's representatives. Here then we believe is to be found the explanation of Baron Kato's speech. Although Japan has made considerable progress during the past century the bulk of her population are not yet qualified to grasp and apprehend the obligations of international ethics. The obvious appeals to them, as in fact it appeals to the bulk of the population in other countries. They know that Japan has defeated a German military force and has wrested from it what was to the Japanese man in the street a German possession. What more proper then, as a recompense for the blood and treasure expended in reducing Tsingtau, than the retention of Kiaochou? That, in all probability, is the viewpoint of the Japanese man in the street, and a Cabinet with a minority in Parliament must necessarily keep that fact in mind. We are of the opinion that Baron Kato's speech may be justly regarded as a piece of political window dressing. It is to be observed that while the pledges given to the world not to impair China's territorial integrity and to return the Protectorate were clear and unequivocal, the statement in the Diet in reply to an opposition member committed the Japanese Government to nothing, but by reason of its ambiguity was calculated to satisfy the unthinking jingoes who desire Japan to retain Kiaochou. The splendid spirit of the Samurai, who put honour before wealth and worldly advantage, even before life itself, we believe still guides the statesmen who are responsible for the conduct of Japan as one of the Sisterhood of Nations, and we confidently look to them when the time arrives to redeem their promises to the uttermost without the necessity arising for pressure from any quarter whatsoever. We prefer to believe that the following expression of opinion reflects the real spirit of the Japanese Government concerning its obligation to China and the world. Public replies in the Diet for political effect are one thing. The world knows how to gauge such utterances. For real common sense and an honest expression of Baron Kato's opinions, we commend to our readers the well merited rebuke he administered to a group of meddling politicians who apparently desired "strong"

action against China. These vigorous remarks are logical, convincing, and bear the stamp of veracity. Unless future events compel us to change our views, we believe that in this "dressing down" administered to his jingo constituents, is reflected the true spirit of Baron Kato and the Samurai who still control the policy of Japan. The return of Kiaochow to China, is a matter which can only be considered after the termination of the war.

According to the *Nippon*, Messrs. Tanabe, Otake and Nakamura, of the Taishi Rengokai, an association of politicians professing to be interested in Chinese affairs, waited on Baron Kato, Minister of Foreign Affairs, the other day, and elicited from him the following remarks in reply to various views laid before him on Chinese questions:—

"I understand your intentions, but I must say that your views are not practicable in this civilized age. You must remember, first of all, that Japan waged the recent war, not against China, but against Germany, so that it is quite improper for her to prefer any heavy claims against China. Japan's policy towards China must always have in view the development of trade. In competing for the right to grant loans to China, the Powers are actuated simply by a desire to do profitable business. Your apprehensions that these creditor Powers will despatch troops when civil disturbances break out in China, on the pretext of protecting their rights, and that they will thus pave the way to territorial expansion, are not justified. I feel confident that Great Britain, for instance, will never assume any such attitude in China. So far as Japan is concerned, it must be her guiding policy to place her own affairs on the surest foundation before looking to any developmnet abroad, ever keeping in mind, of course, the cardinal importance of extending her trade. *You look upon China as if she were the treasure-house of the world, but you are greatly mistaken in this idea.* Germany's administration in Shantung Province has been a great failure, while Russia has gained very little success in Outer Mongolia. In fact, none of the Powers have ever been successful in China. It is, therefore, a forgone conclusion that Japan can achieve no brilliant success where other countries have failed. This point calls for serious study in formulating our policy towards China. As regards the settlement of the Manchurian and Mongolian questions, I hope you will leave everything in my hands. You clamour for land ownership rights in China, but beside the lands attached to the railway in Manchuria, Japanese subjects are engaged in cultivating land leased by the Chinese. Under these circumstances, the withholding of land ownership rights constitutes no ground for complaint. In my opinion this procedure is sufficiently effective in colonial expansion. In Manchuria there are no important mines and the acquirement of any right to work them would serve little for purposes of immigration."

"The future of Tsingtau and various questions in connection therewith, will be solved at the Peace Conference to follow the war, and the present is by no means a fitting occasion to discuss them. *The Shantung Railway is, needless to say, a private enterprise, and Japan is simply in temporary possession.* Judging from the business reports of the Railway, the undertaking has been a failure. Various mines in the province have also been duly investigated by the Japanese authorities, but none have been found promising as business schemes. The question as to whether Japan will return to the original owners what she now occupies in Shantung province is one that must be left for future consideration."

CHINESE VERMICELLI INDUSTRY

Vermicelli is made from the small green bean (lü tou) in the Ninghai and Fushan districts, in the vicinity of Chefoo, to the south and west, there being one factory in Chefoo in connection with the Hwa T'ai silk filature Large quantities are made by individual farmers in these districts, but more is made in the little family factories scattered all over this territory. The farmers in Fushan buy their beans in Chefoo, as the soil in this district will not raise a good crop of the green bean; while those living in Ninghai raise their own. These two districts are divided by a low range of hills; Ninghai being on the sea and having a sandy loam and Fushan having a loess soil.

The beans grow upon the ordinary bean bush and are harvested about the first of September, yielding from 250 to 450 pounds of beans per mou (733½ square yards), or between 1 and 2 piculs (picul = 133 pounds) of vermicelli. They are separated from the pods on a primitive thrashing floor by the use of flails, and winnowed by being thrown up in the air by wooden shovels for the breeze to curry off the chaff. The process is divided into two distinct stages, viz. the bean meal molds and the finished product, the two stages requiring about an equal division of time.

THE FIRST AND SECOND STAGES

After thrashing, by a process of boiling and repeated washing the skins are separated from the white meat of the beans, which are then ground in the primitive millstones. Then, by a further process of straining, cooking in cloth bags, draining, and cooling, the first stage of the process results in the appearance, upon a long bench outside in the sun, of a number of pear-shaped snow-white bean meal molds, having diameters at top and bottom of 8 and 12 inches, respectively. This is the invariable sign (and the only one to a stranger) of the exact location of a vermicelli factory—the long white lines of the drying product, mentioned below, serve as a general guide at a distance.

After drying, the molds are brought in and crumbled to a dry powder. A little is thoroughly mixed in cold water and about half a pint of the mixture is poured into about twice as much boiling water and whipped into a gelatinous mass, in order to bring out the starch, and then dumped into a large pot of water which is kept up to the boiling point. After eight or ten of these masses have been made, the number depending upon the amount of vermicelli desired, they are separately dipped out in a small amount of the boiling water and again whipped until the water has been absorbed. These starchy masses are then in turn dumped into a large k'ang (earthen jar) containing pulverized bean meal, with which they are thoroughly kneaded to the consistency of dough, the starch and meal being gradually added during the kneading process until all the starch has been used. A workman then takes a sitting position at the edge and above the large pot of boiling water, holding the handle of a brass-bottomed 10-inch colander, the other side of which is suspended by a wire 18 inches above the boiling water.

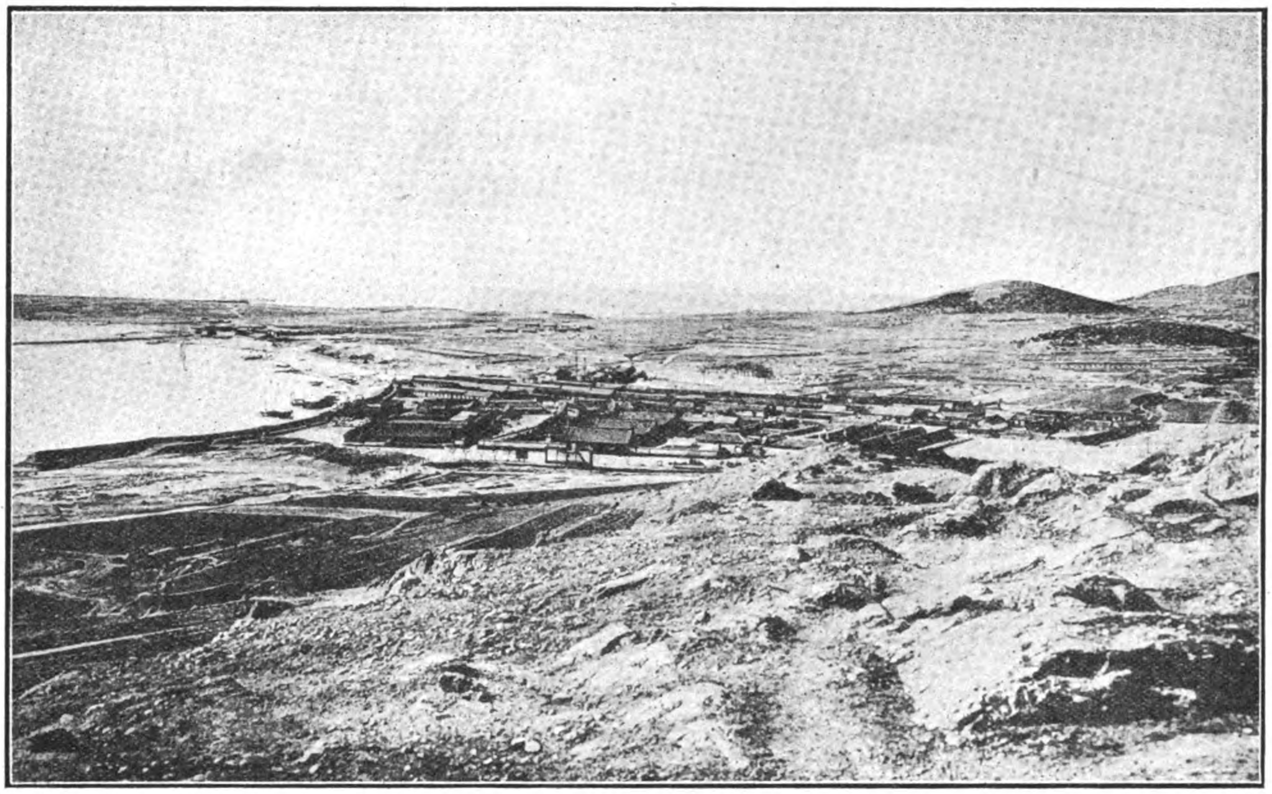
FINAL OPERATIONS AND PROFITS

A ball of dough is tossed into the colander and forced through by striking it with the palm of the hand. The little slender strings of dough trail down into the boiling water and are guided on over the edge of the vessel into two lower vessels consecutively arranged and holding cold water, from the last of which they are collected into bundles of strings and strung upon short sticks in 4-foot lengths and hung up to drip. Two piculs of vermicelli are thus made at one sitting.

When the dripping frame has been filled the partially dried strings are hung outside of the village to be thoroughly dried in the sun. At a distance these 200-foot lines have the appearance of lines of white clothes. The product is then packed in burlap bales of 1 picul each and taken to the market on pack animals, 2 bales to the animal, where it is sold to the wholesale dealers at $4 to $5 per bale, who in turn export it at an advance of about 100 per cent in price. The quality of the products is regulated by the amount of starch and adulteration by sweet potatoes or kaoliang, the adulterated product being the cheapest.

In making 1 picul of vermicelli the manufacturer uses about $6 worth of beans; but these farmers who make vermicelli and sell it for less than they could get for their beans make their profit from the chaff and harvested fields upon which they fatten their catle, and the waste upon which they fatten their hogs and fertilize their land, and which is considered a superior fertilizer to the silk chrysalis, which sells at 2 cents per pound. The buy-products of a picul of vermicelli amount to about $3, thus giving a nominal profit of from $1 to $2 per picul, which represents three days' labor of four men.

Of the total export of vermicelli about 73 per cent is shipped from Chefoo, Hongkong and Straits Settlements taking about 86 and 6 per cent, respectively.



The old mud-walled Chinese fishing village of Tsingtau, which the Germans have developed into the present magnificent modern settlement and stronghold.

TRADE OF TSINGTAU

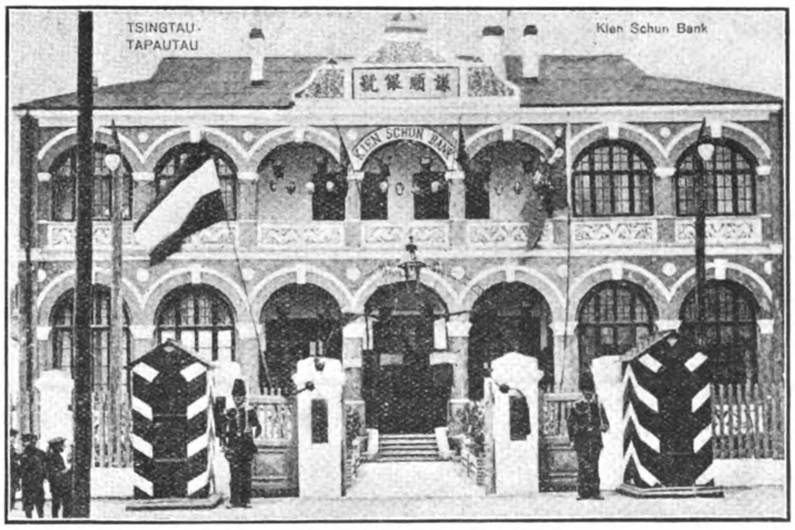
The commercial situation at Kiaochou last year is to be regarded as satisfactory, on the whole, from the German point of view. There was an increase in the gross and net values of trade, although in the case of exports the gain was more apparent than real. The substantial increase in imports was the result of a higher purchasing power caused by abundant crops. Extensive building continued, the result of the enormous land sales of 1912. The Government slaughterhouse enjoyed a record year in the number of animals slaughtered. The Shantung Railway also had a record year in both passenger and freight traffic. The population, both Chinese and foreign, showed a substantial increase since the last census (1910). While one of the two coal mines under German management has not been successful, the other is a fair producer, and recent discoveries of rich iron ore give promise of the establishment of a thriving industry in the near future. The political troubles of 1913 had some effect on trade, shippers not caring to risk shipments abroad by way of Shanghai.

INCREASE IN POPULATION.

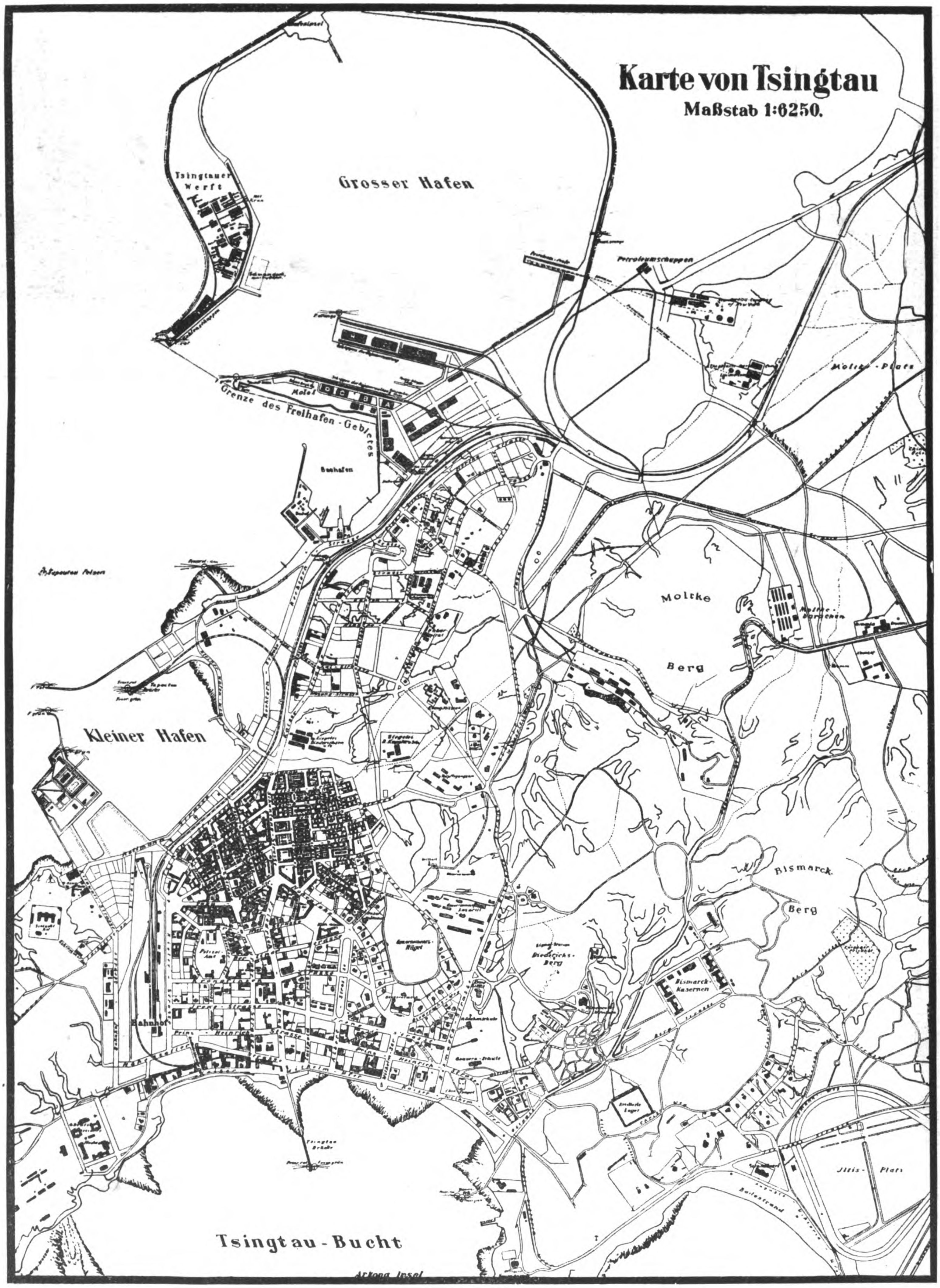
The population of Kiaochou, the German protectorate (Schutzgebiet), in which Tsingtau is situated, was estimated to be 191,984 in 1913, as compared with 167,224 in 1910, showing an increase of nearly 15 per cent in three years. The population of the city of Tsingtau was 60,484 according to the census taken in July, 1913, and 40,264 in 1910, classified as follows:

Classification.	1910	1913	Increase in 3 years.
European and American	1,621	2,069	448
Military	2,275	2,401	126
Chinese	36,180	55,672	19,492
Japanese	167	316	149
Other Asiatics	21	26	5
Total	40,264	60,484	20,220

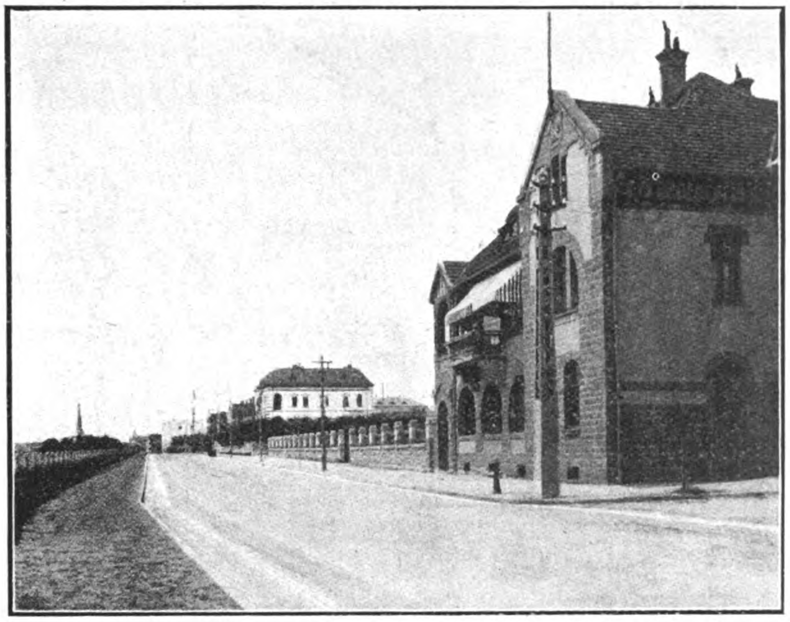
Tsingtau, Chinese City.



Tsingtau, Chinese Bank.


Karte von Tsingtau
Maßstab 1:6250.
Grosser Hafen
Tsingtauer Werft
Petroleumschuppen
Grenze des Freihafen-Gebietes
Kleiner Hafen
Moltke Berg
Bismarck Berg
Bismarck-Kasernen
Bahnhof
Iltis-Platz
Tsingtau-Bucht
Arkona Insel

TSINGTAU: Hohenzollern Road, with Railway Station in Background.



Kaiser Wilhelm Street.

The nationalities represented among the 2,069 Europeans and Americans in the city in 1913 were: German, 1,855; Russian, 61; British, 51; American (United States), 40; French, 15; other, 47.

While the Europeans and Americans increased 27.6 per cent. during the three years the Chinese increase was 56 per cent. About 33 per cent. of the former were under 20 years of age; 56.5 per cent. were between 20 and 45. They were distributed by sex as follows: In 1910, 979 males to 642 females; in 1913, 1,183 males to 886 females. The Chinese population within the city limits of Tsingtau was distributed as follows:

Census.	Over 10 years. Males.	Over 10 years. Females.	Under 10 years.	Total.
1910	28,127	3,804	2,249	34,180
1913	40,115	8,573	4,624	53,312
Increase in 3 years	11,988	4,769	2,375	19,132

This increase testifies to the rapid growth of Kiaochou. The Chinese within the city number 53,312, almost 56 per cent. more than in 1910. Within the last three years many wealthy Chinese went to this port as a result of the political disturbances of 1911 and 1913. There are about 40 Americans in the district, mainly missionaries and employees of the British-American Tobacco Co.

TSINGTAU AS A RESORT.

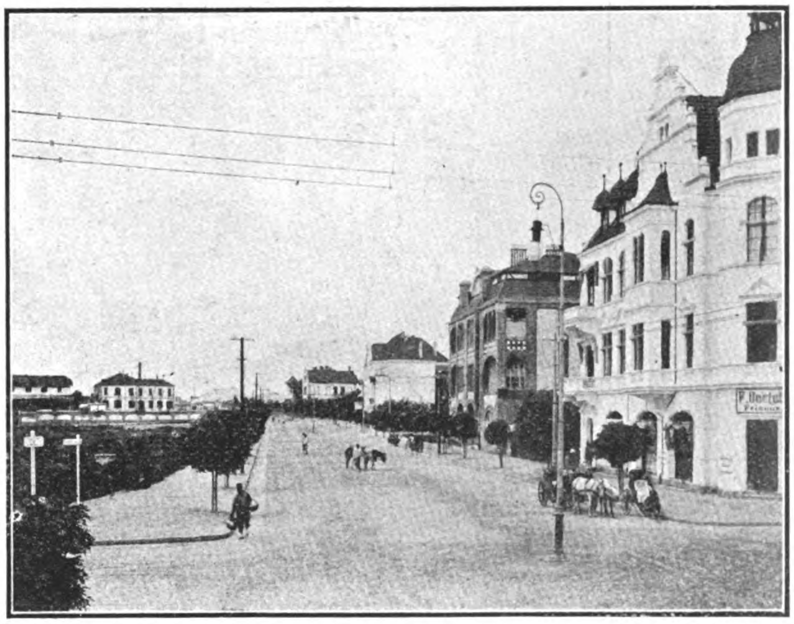
The Germans have heretofore evidently been bending all their energies to make Tsingtau the most popular resort of China, and have met with considerable success in the past. They have expended millions in improvements of all kinds. During the summer of 1913, the best two hotels raised their prices, and there was a falling off in the number of visitors, but on May 1, 1914, more than one-half of the hotel rooms were engaged for the summer. Tsingtau is being extensively advertised all over China.

LAND SALES AND BUILDING.

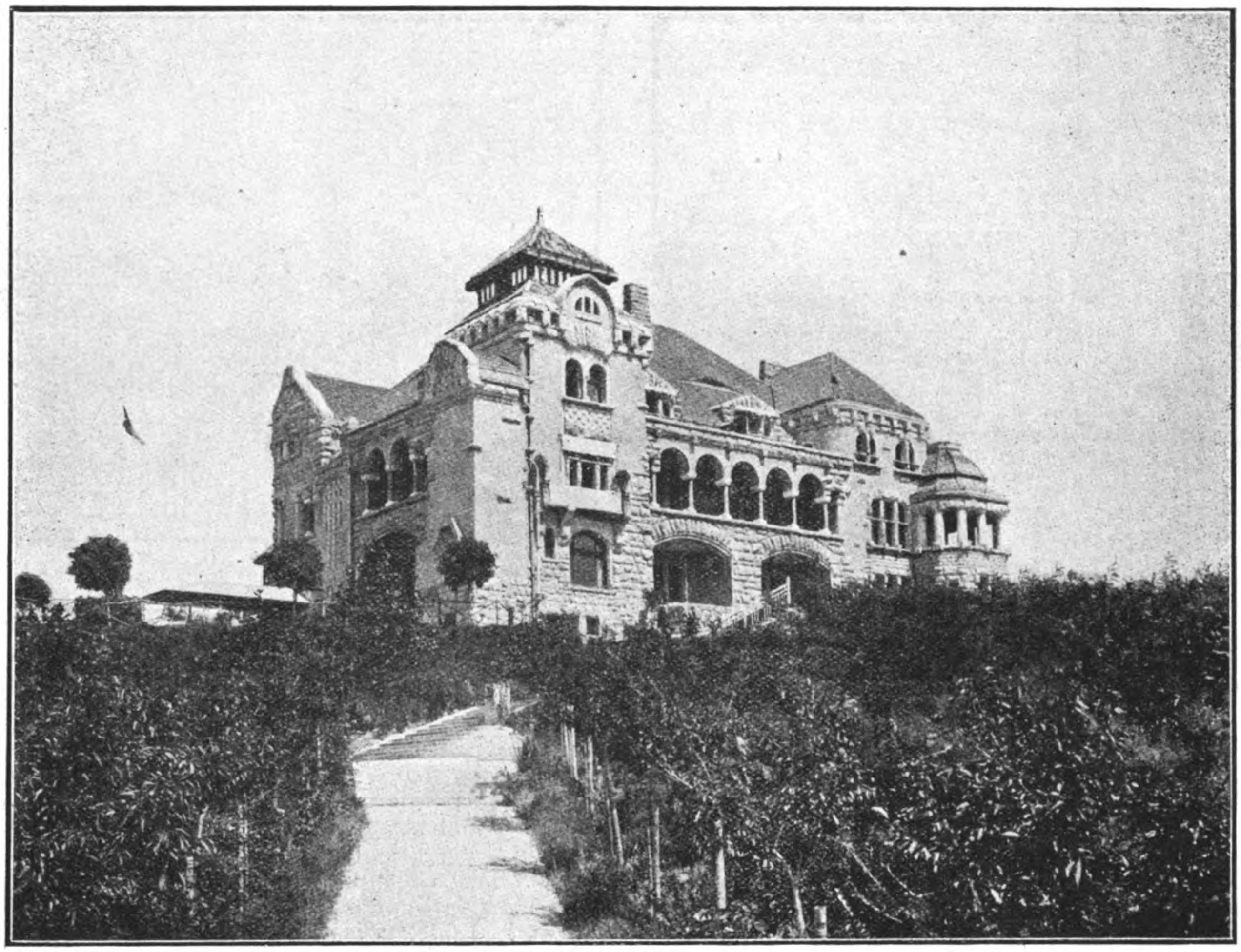
The numerous sales of land reported in 1912 feil off about two-thirds in both total area and value during last year. This is the result of the fact that the best lands have been acquired on speculation, leaving much less of the desirable grade on the market. In 1913 there were only 40 sales of land, amounting to 757,828 square feet, for $59,704 gold. In the preceding year there were 131 sales, covering an area of 2,889,701 square feet, at a price of $181,159.

The following statement shows that extensive building continued unabated in 1913 as a result of the numerous land sales of the preceding year:

TSINGTAU: Prince Heinrich Road, Post Office in Foreground.

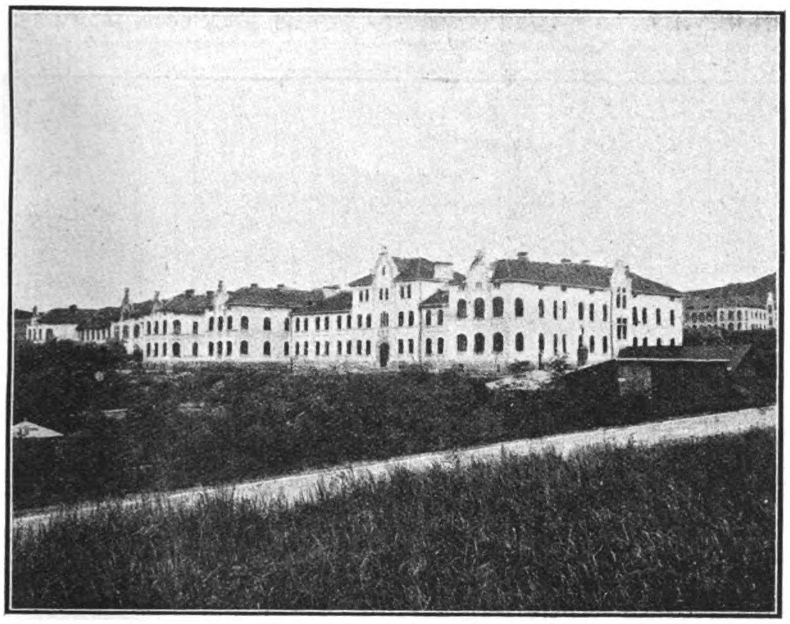


Prince Heinrich Road.



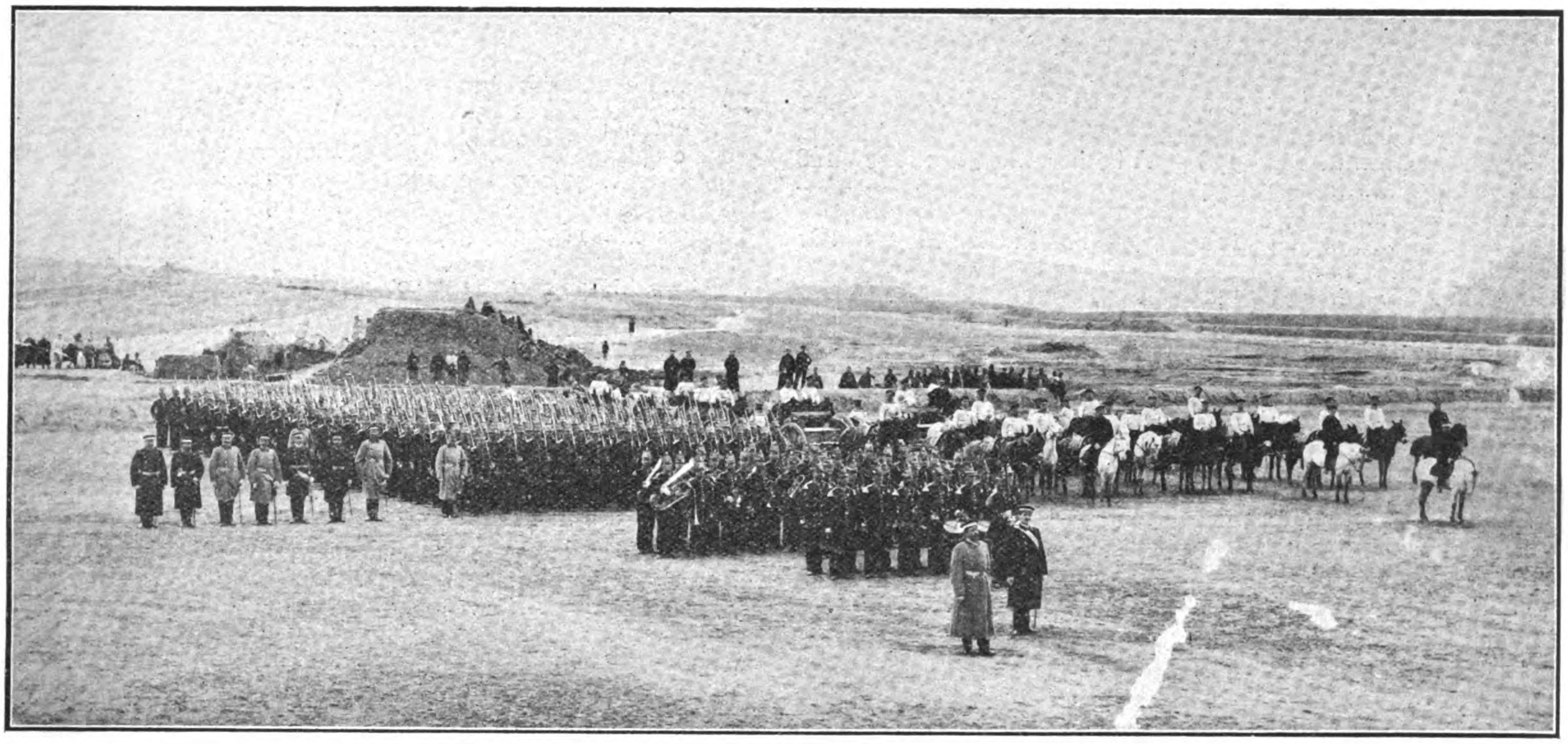
TSINGTAU: The Governor's Residence.

TSINGTAU: The Government Building.

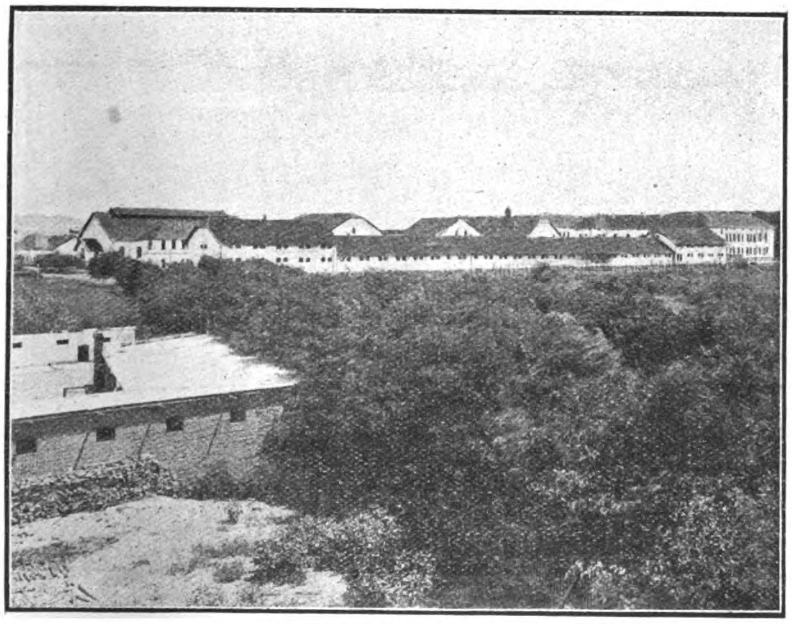


Bismarck Barracks.

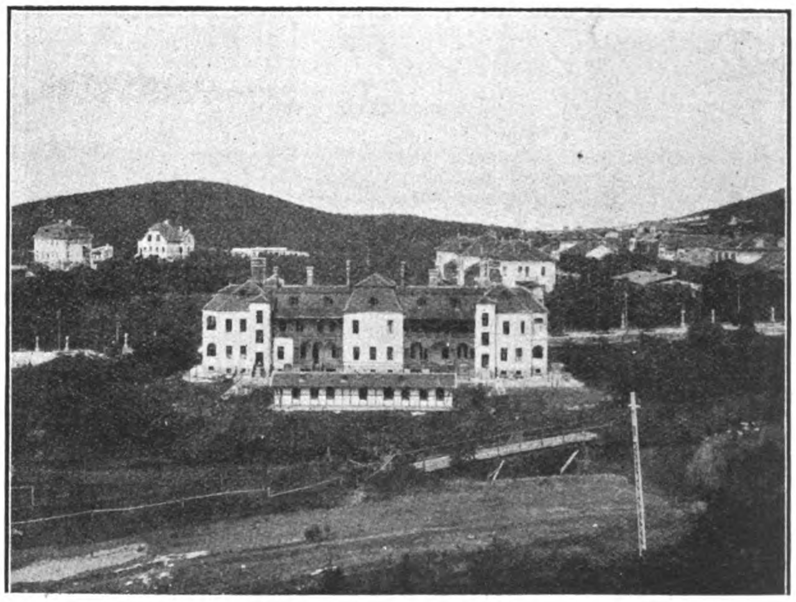
The Iltis Barracks.



German Troops on Parade.



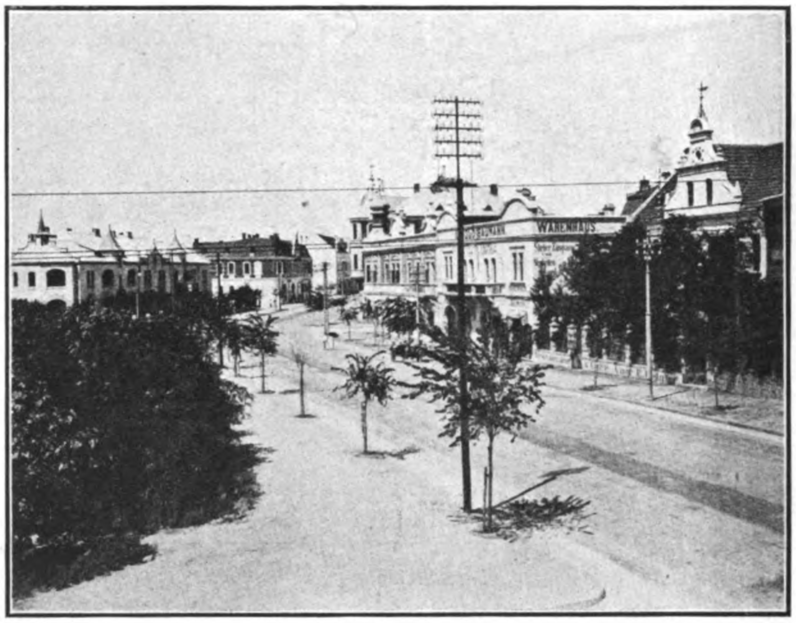
Moltke Barracks.



The Government Hospital.

VIEWS OF TSINGTAU.

TSINGTAU: Irene Road.



Friedrich Road.

Building permits.	1912	1913
Dwellings and business places	182	178
Outbuildings	127	134
Warehouses and workshops	64	100
Additions and remodelings	95	141
All other	127	128
Total	595	681

The number of permits for warehouses and workshops and for dwellings and business places is worthy of note. There is every incentive for the improvement of property in Tsingtau, as the tax on unoccupied land is high.

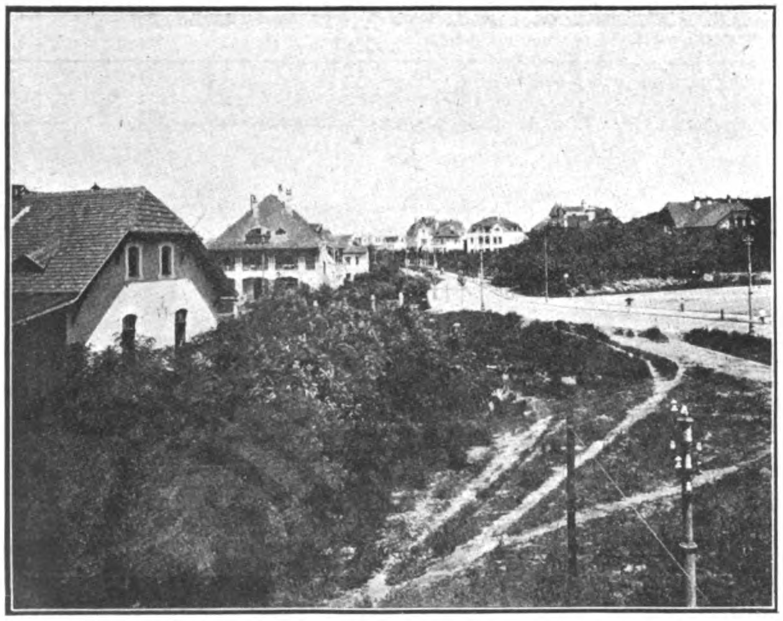
COAL MINING—IRON.

The following table shows the output of coal and its disposition at the two local coal mines—the Fangtze and the Hungshan—the property of the Shantung Mining Co.:

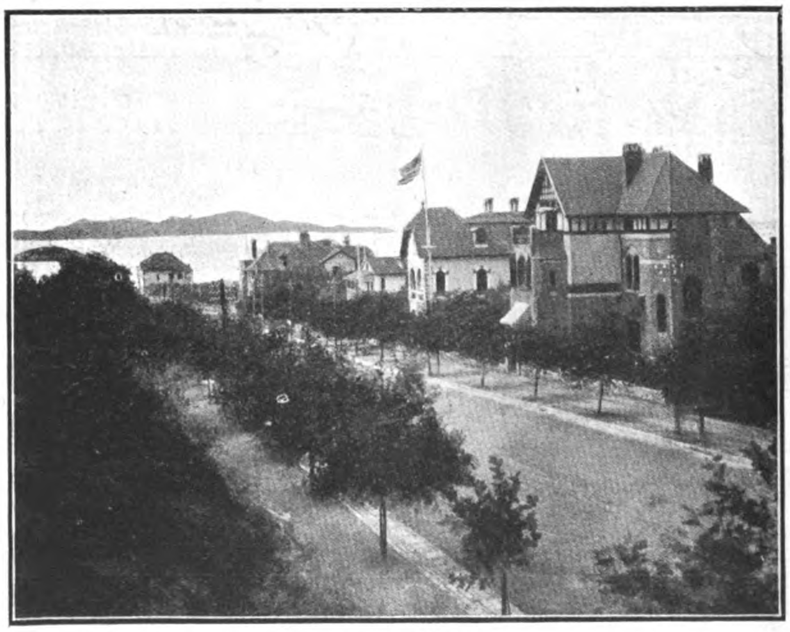
Output and disposition.	Fangtze mine.	Hungshan mine.
Output:	*Tons.*	*Tons.*
1912.........	199,073	374,604
1913.........	178,600	370,000
Disposition of 1913 output:		
Used at mines......	49,200	27,200
Sold at mines	16,200	38,000
Sold along railroad...	52,100	110,300
Sold to railroad	14,500	19,500
Bunker and export......	5,000	165,000
Sold in Tsingtau ..	41,600	10,000
Total......	178,600	370,000

The Fangtze mine has shown a general decline since 1909, when it was at the high-water mark of its prosperity. It is becoming more difficult to work, showing signs of exhaustion, and it will be noticed that 49,200 tons of the 178,600 tons extracted were used in the mines themselves. The output of the Hungshan mine was approximately the same as that of the year before. As the crops were exceedingly good, a cheap fuel has been supplied to the Chinese to the detriment of the coal interests.

In January, 1913, the Shantung Railway Co. took over the Shantung Mining Co. Mining shares having depreciated on account of the lack of success of the Fangtze, the railway allowed $1,285,200 in railway shares at par value to the stockholders of the mining company for their $2,856,000 of mining stock. It was hoped that the Shantung Railway Co., with its advantages of transportation to and from Tsingtau, would make the mines pay.

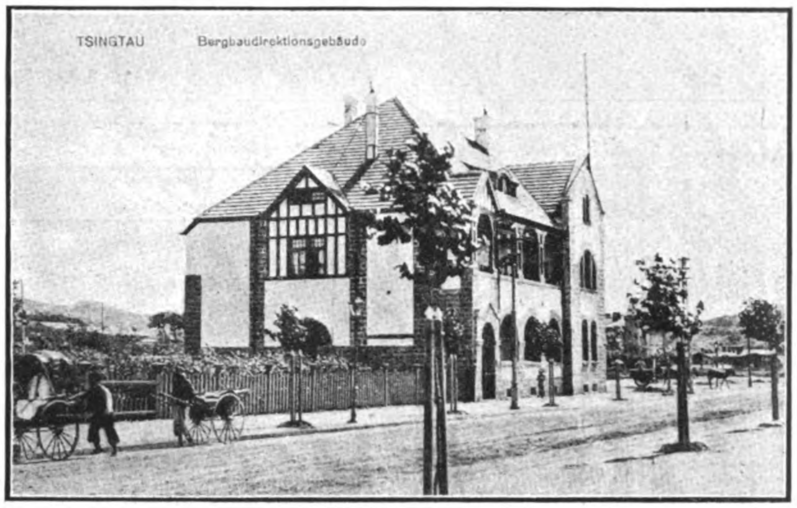


TSINGTAU: Hohenlohe Road.

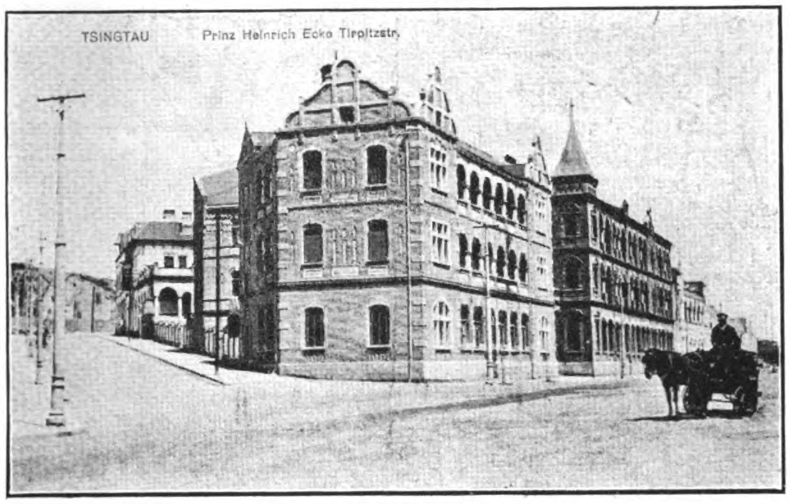


Bismarck Road.

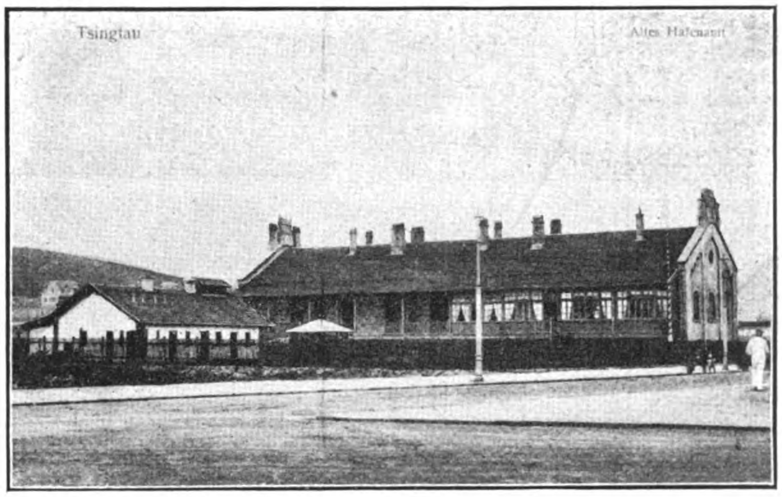
Catholic Mission.



Office of the Shantung Mining Co.

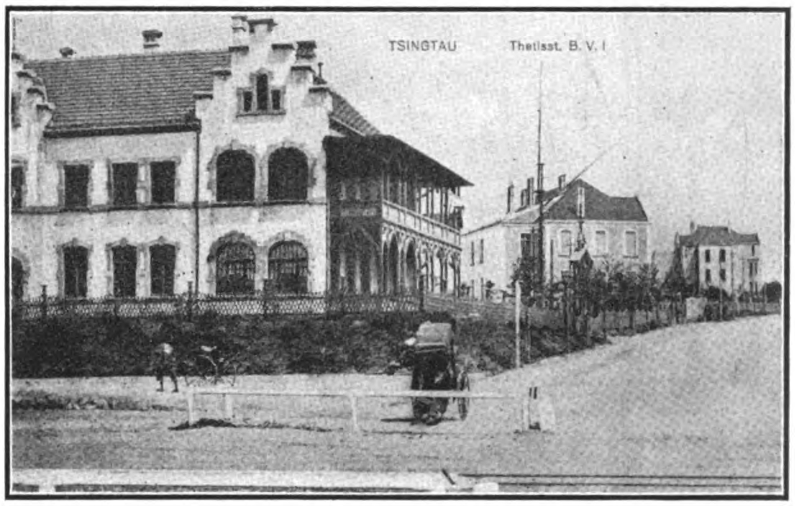


Prince Heinrich and Tirpitz Streets.

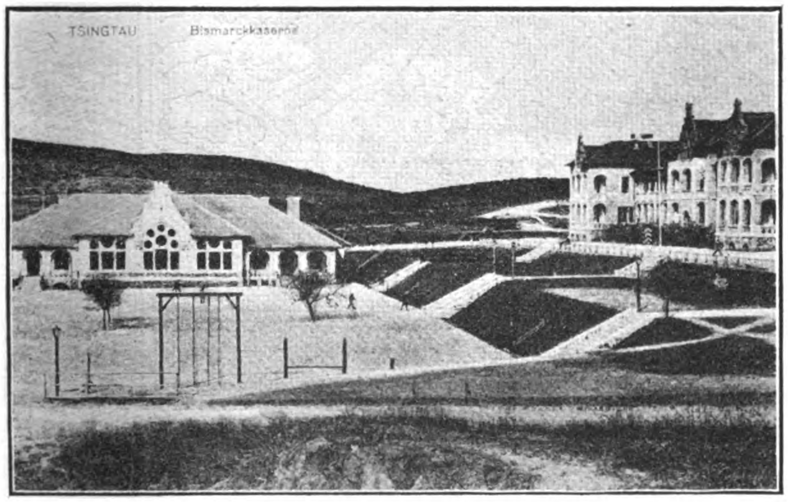


Old Harbor Office.

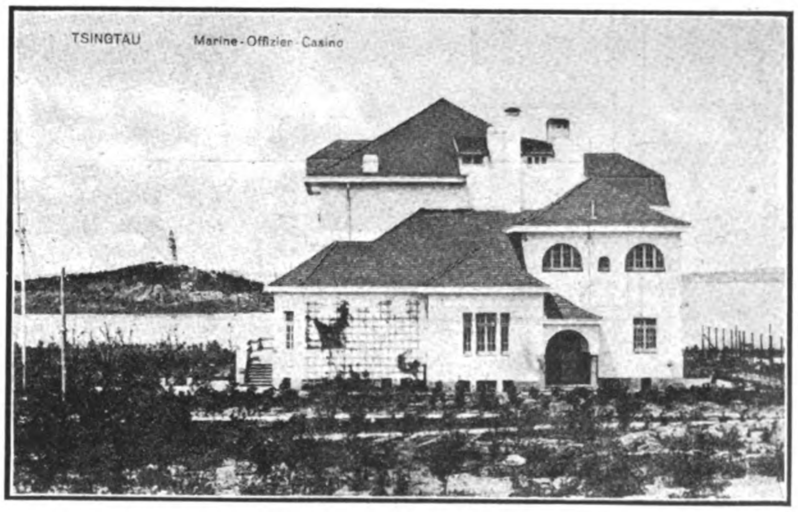
Railway Houses.



Thetis Street.



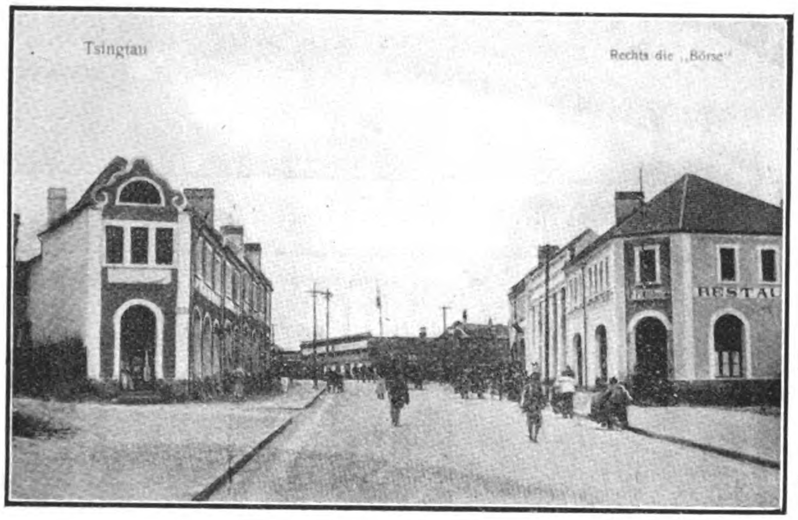
Bismarck Barracks.

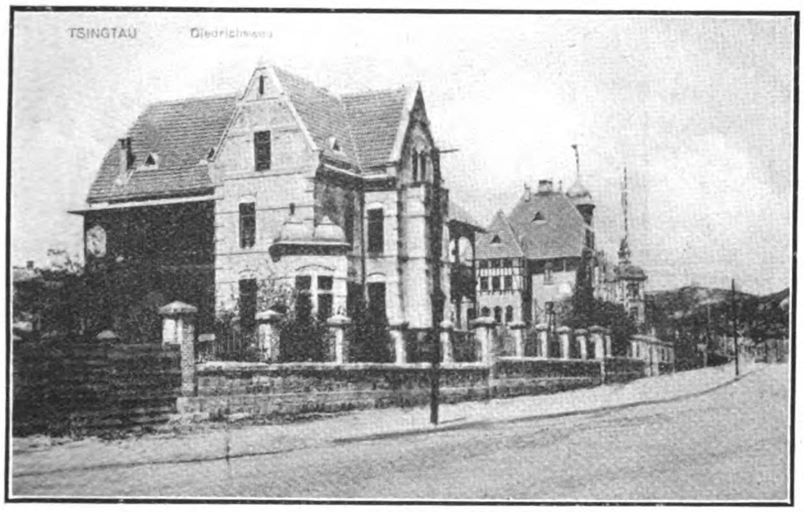


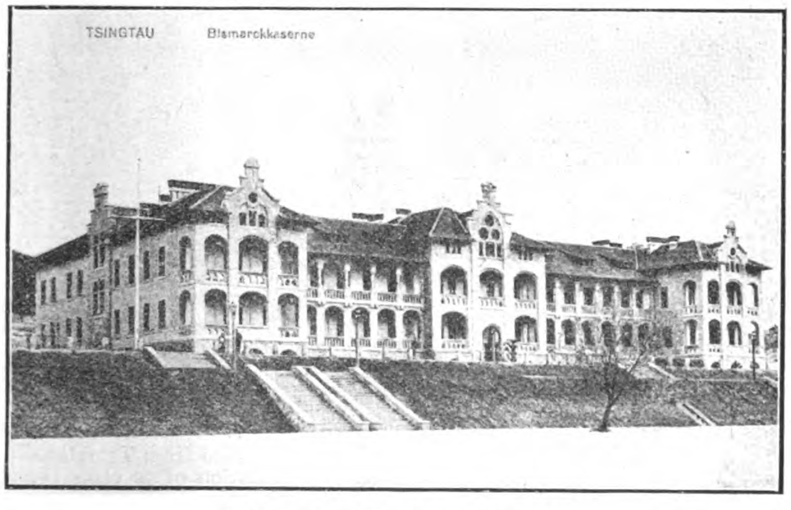
Marine Officers Casino.

VIEWS OF TSINGTAU.

TSINGTAO
By courtesy "North China Daily News."
SCALE: 1 = 200,000
KIAOCHOW
KIAOCHOW BAY
TSINGTAO
HARBOUR
TSINGTAO BAY
LAOSHAN
LAOSHANWAN
TSIMO
WANTAO
MAITAO
FUTAO







VIEWS OF TSINGTAU.

1.—Albertstrasse.
2.—The Bourse, on the right.
3.—Deidrichstrasse.
4.—Bismarck Barracks.

It was reported in the *Weekly China Tribune* of May 3, 1914, that valuable iron ore had been found in the Kiaochou district. The paper adds:

"Recent investigations have shown that samples of the ore found contain 65 per cent. iron, 0.24 per cent. manganese, 0.03 per cent. phosphorus, and 0.08 per cent. sulphur, while the veins of ore are 25 to 50 yards in thickness. It is estimated that there are about 100 million tons of ore in the district. Its value is still further increased by the fact that there is a plentiful supply of coal in the vicinity. New ironworks will be erected at Tsangkau, and will have two blast furnaces, each with an output of 150 tons a day. The capital to be invested will amount to about $2,500,000 gold."

WORK OF SLAUGHTERHOUSE—MISCELLANEOUS BUSINESS.

It is worthy of note that 27,168 cattle were slaughtered during 1913, as against 12,010 in 1912, a gain of 126 per cent. The increase was the result of a large demand for export, more than 20,000 cattle being shipped to foreign ports. This is accounted for by the more or less sustained high prices in foreign markets and the reduction of the Government tax at the close of 1912 from $1.50 to $1 per head. There was a slight increase in the number of pigs and sheep slaughtered and a falling off in the number of calves. The totals for 1913 were: Calves, 1,909; sheep, 3,044; and pigs, 13,222.

Five firms are interested in the export of beef in winter and live cattle in summer, all of which are destined for Vladivostok.

The reasons for the heavy export from Tsingtau as compared with Tientsin are the fact that communication with the producing centres, viz., Shantung and Honan, is very easy owing to the railway, and the perfectly equipped and managed Government slaughterhouse where two veterinary surgeons are constantly employed. In the slaughtering season (November to April inclusive) these are increased to five. The Russian Government also appreciates the German system of examination of every part of the animal. All beef imported into Vladivostok has to be accompanied by a certificate from a Russian veterinary surgeon, of whom there are several. 82,508 quarters and 28,413 head were shipped during the year.

Among the new enterprises projected this year in Tsingtau, the iron foundry, which it was proposed to start before the end of 1914, has already been mentioned. In January of this year the Chartered Bank opened a branch office, making now five recognized exchange brokers in all. The Yu Tai Bank, a Chinese concern, opened its doors about the same time. The competition has been very spirited. A large hat factory under German management was planned for the present year.

SHANTUNG RAILWAY.

The year 1913 marked an advance in the affairs of the Shantnug Railway Co. The goods carried over this line amounted to 911,434 tons in 1913, as against 827,222 in 1912, a gain of 10 per cent. As a specific declaration of the kind of goods is no longer required, except in the case of those articles dangerous to handle ,it is not possible to give reliable information as to the sort of goods shipped over the line. They were probably much the same as in 1912, when raw cotton, beans, bean oil, groundnuts, straw braid, skins, hemp, jute, tallow, and walnuts were shipped from the interior, and timber, cotton goods, cloth, petroleum, sugar, and cigarettes were transported westward from the coast. A heavy reduction in freight rates has been made on import cargo to points west, but a slight reduction only to crops shipped east to Tsingtau. There was also a slight increase in the number of passengers carried over the Shantung Railway during last year. In 1913 there were 1,317,437 passengers, as against 1,230,403 in 1912, a gain of 7 per cent. As the gain in 1912 over the preceding year was more than 35 per cent, this small increase has been something of a disappointment. It is accounted for by the competition of the Tientsin-Pukow line. Many travelers going to Shanghai now go straight by rail to Nanking instead of traveling by way of Tsingtau.

The table below will show the steady increase during the past five years:—

	Tons.
1909	712,060
1910	760,123
1911	705,073

1912—	
Westward traffic	358,492
Eastward traffic	468,730
Total	827,222
1913—*	
Westward traffic	374,484
Eastward traffic	536,950
Total	911,434

SHIPPING STATISTICS.

The prospects at the beginning of the present year were that it would be one of keen competition for both European and interport shipping. Butterfield & Swire, the agents for the Blue Funnel Line, opened an office at Tsingtau and are reported as doing a good business. The China Home Freight Conference, which was appealed to in 1911 because the number of vessels going to Tsingtau did not meet the demand of shippers, kept up and even increased the rates in certain instances during 1913. They could not maintain them, however, and the end of the year was marked by a severe competition.

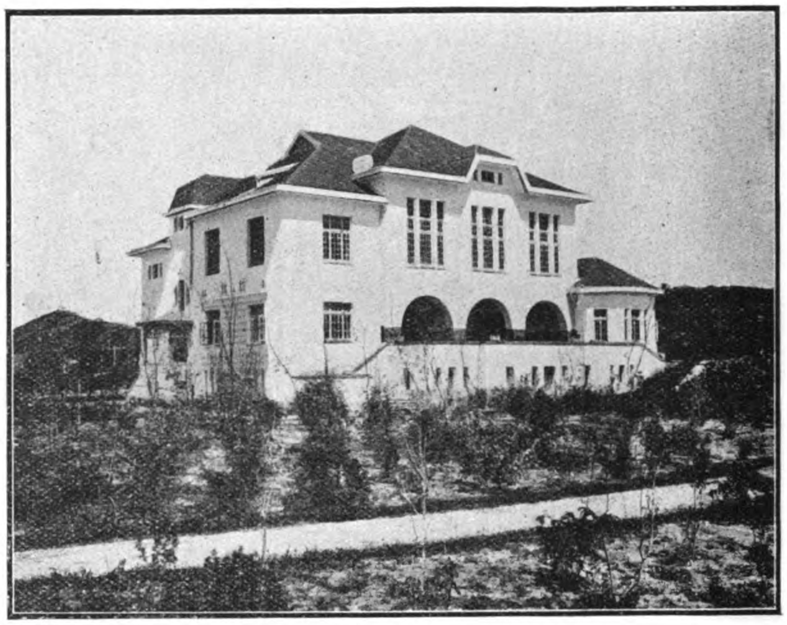
The following table shows the number, nationality, and tonnage of steam vessels entering the port of Tsingtau during the calendar years 1912 and 1913:

Nationalities.	1912 Number.	1912 Tons.	1913 Number.	1913 Tons.
American	2	4,146	17	35,238
Austro-Hungarian		....	1	3,440
British	271	454,107	253	407,156
Chinese	25	26,265	48	28,587
Dutch	1	2,293	....	....
French	5	19,231	4	13,067
German	255	502,721	331	572,062
Japanese	169	142,543	260	222,693
Norwegian	41	40,089	8	12,939
Russian	10	9,993	1	3,440
Total	779	1,201,388	923	1,298,622

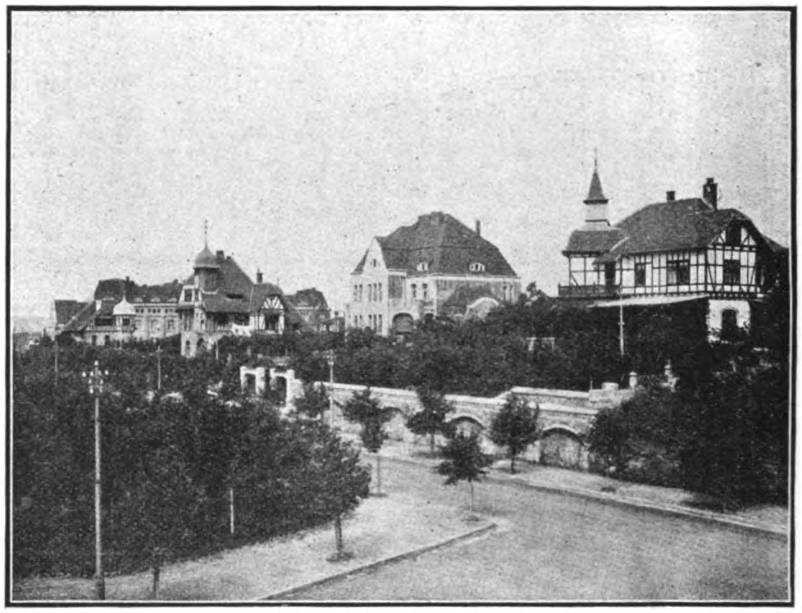
The gain in the number of American ships in 1913 is accounted for by the fact that American firms are engaged in the exportation of cattle to Vladivostok. About 60,000 tons of ocean freight were shipped—35,000 by weight and 25,000 by measurement.

FOREIGN TRADE.

The net trade of Tsingtau in 1912 (foreign and Chinese imports less re-exports, and Chinese exports of local origin) amounted to $39,392,705 gold, and in 1913 it increased to $43,193,382, a gain of $3,800,677, or 10 per cent. The net foreign imports were $19,131,778 for 1913 and $17,247,802 for 1912, and the net native imports $5,306,072 for 1913 and $4,145,364 for 1912. The net exports were $18,755,432 for 1913 and $17,999,539 for 1912.



TSINGTAU: Marine Officers' Casino.



TSINGTAU: Diederichs Road.

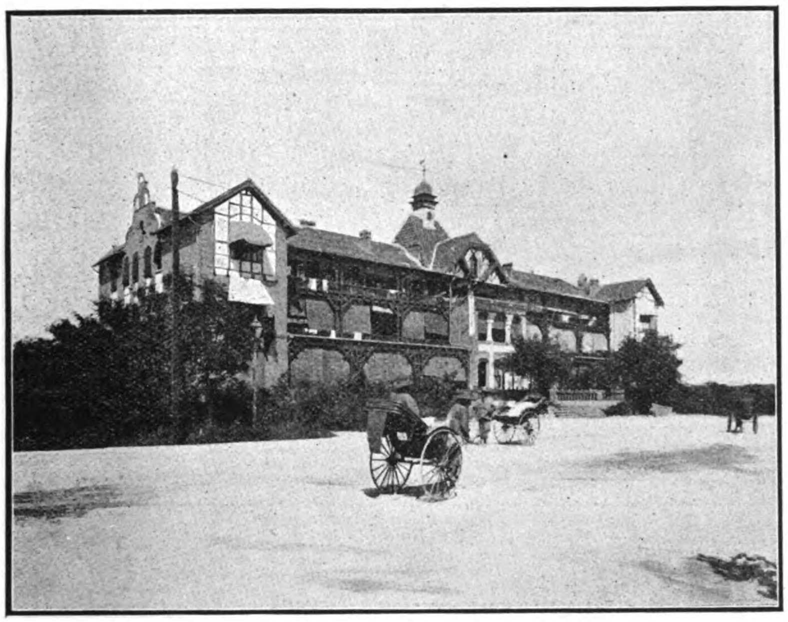
The direct trade with foreign countries, including gross imports, exports, and re-exports of Chinese goods, by principal countries, in the last two years, was as follows.[a]

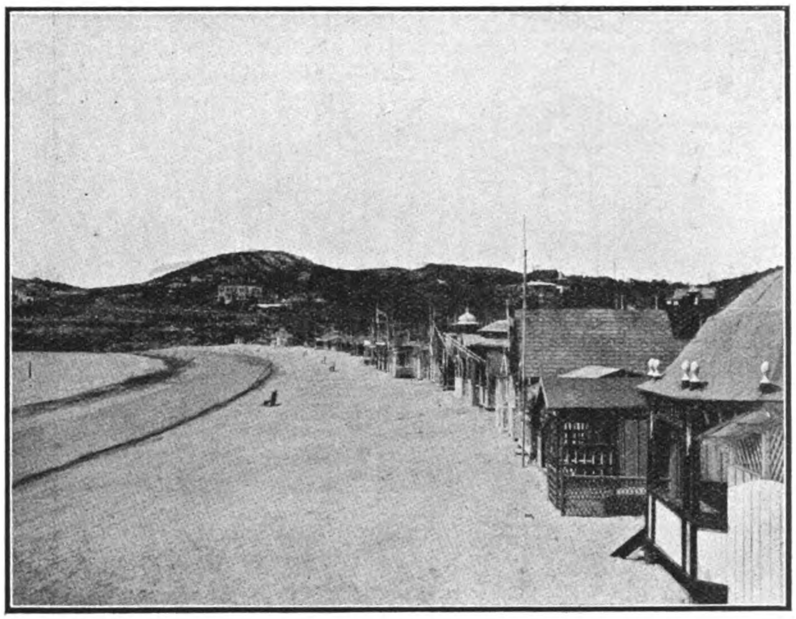
Countries.	1912 Foreign imports.	1912 Native exports.	1912 Total.	1913 Foreign imports.	1913 Native exports.	1913 Total.
Belgium	$323,672	$306,186	$629,858	$224,748	$349,297	$574,045
France	7,624	3,473,286	3,480,910	13,867	2,513,456	2,527,323
Germany	2,047,497	1,253,600	3,301,097	2,107,752	1,669,150	3,776,902
Great Britain.	268,915	331,553	600,468	349,696	236,722	586,418
Hongkong	1,436,234	80,886	1,517,120	1,334,083	284,074	1,618,157
Italy	5,040	153,360	158,400	2,232	226,622	228,854
Japan	4,862,069	656,774	5,518,843	6,063,121	1,544,534	7,607,655
Netherlands	15,840	284,400	300,240	35,388	505,866	541,254
Russia	226,222	682,154	908,376	76,761	1,754,226	1,830,987
Singapore	383,040	....	383,040	453,989	1,870	455,859
United States.	959,040	34,375	993,415	361,737	b 999,543	1,361,280
All other	53,847	279,914	333,761	64,601	93,976	158,577
Total	10,589,040	7,536,488	18,125,528	11,087,975	10,179,336	21,267,311

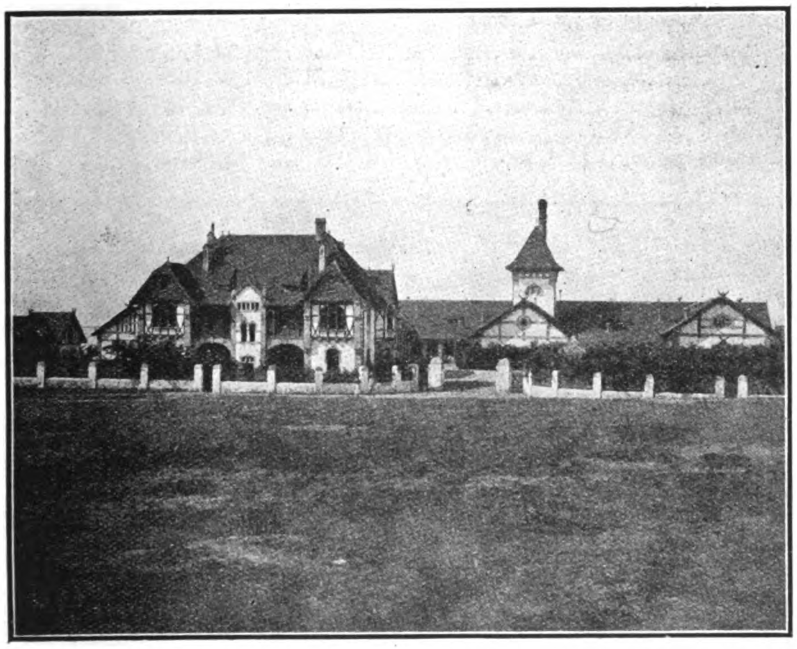
* Out of the 374,484 tons going west, 177,914 tons came from Tsingtau; and out of the 536,950 tons going east, 347,758 tons arrived from Tsingtau.

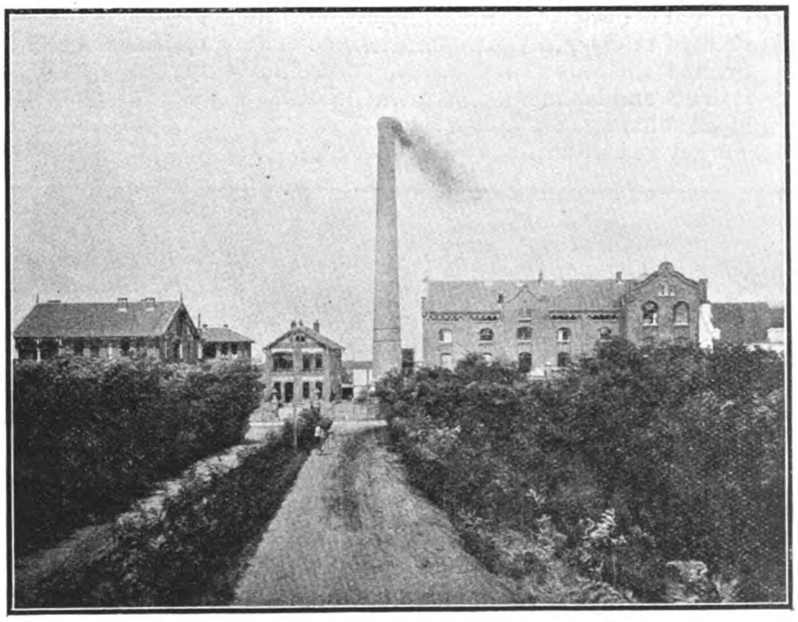
a In this and succeeding tables the conversions from haikwan taels to gold dollars have been made on the basis of a valuation of 72 cents for 1912 and 73 cents for 1913.

b Exports as declared at United States consulate; other figures are not available.







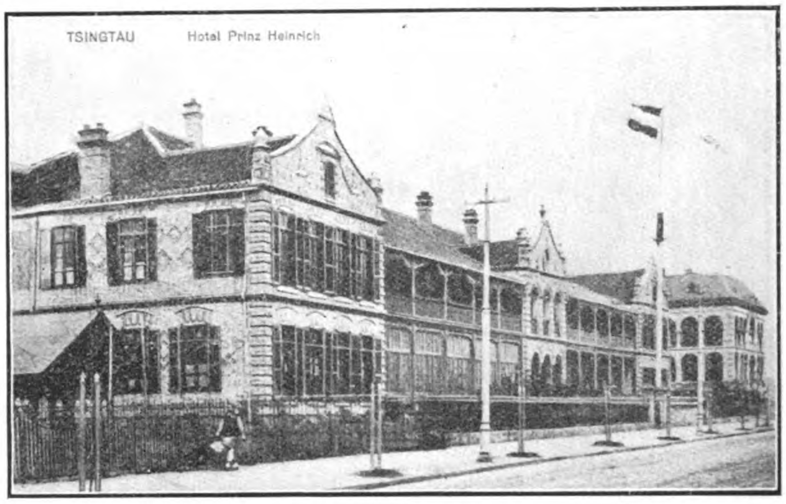


VIEWS OF TSINGTAU.

1.—The Strand Hotel.
2.—Holy Ghost Convent.
3.—Slaughter-house.

1.—The Beach.
2.—Sailors' Home.
3.—Germania Brewery.

TSINGTAU: Government School.

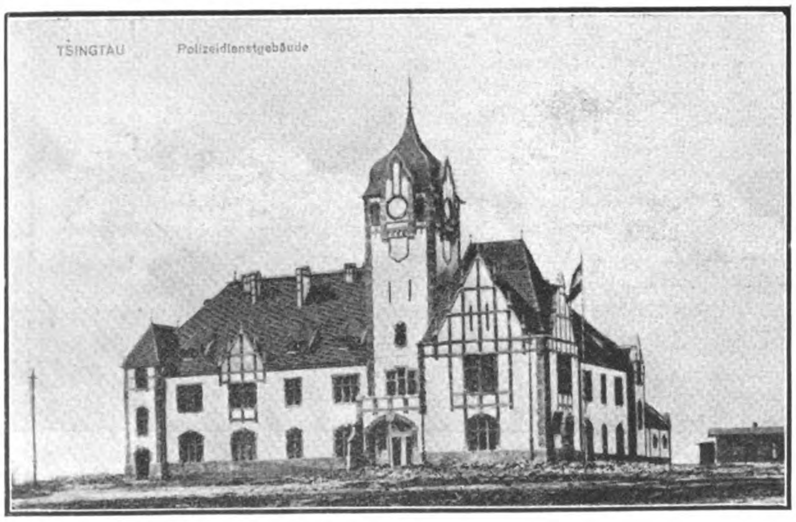


Hotel Prince Heinrich.

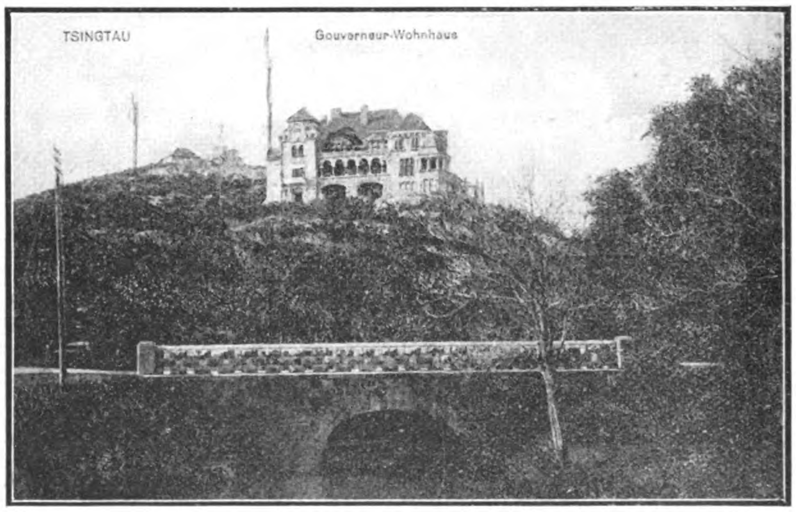
PRINCIPAL ARTICLES IMPORTED.

The figures for imports from the United States are probably not as high as they should be, as many American goods are imported from Shanghai and listed as imports from Chinese ports. The following statement shows the principal net imports at Tsingtau in 1912 and 1913:

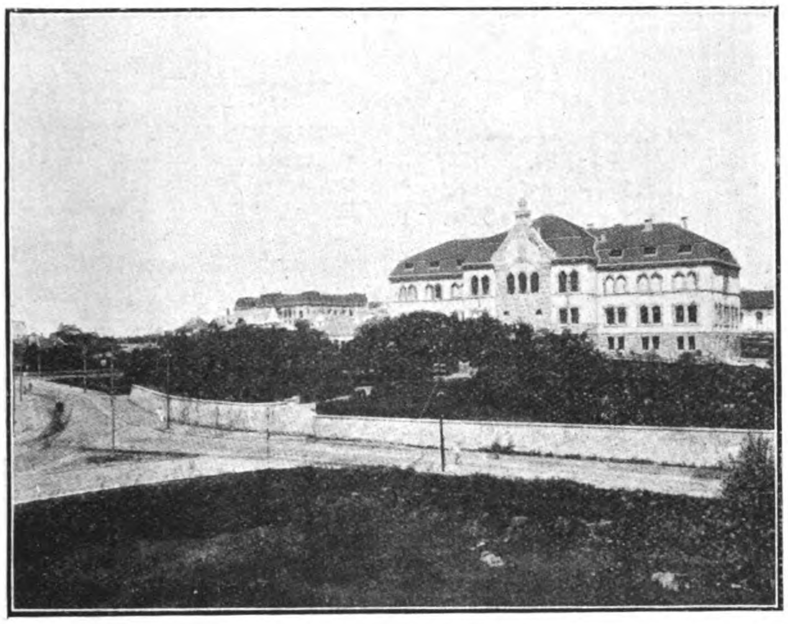
Articles.	1912	1913
Cotton goods, foreign:		
Shirtings—		
Gray, plain ....pieces..	323,418	382,304
White, plain..................................do	56,333	95,204
Sheeting—		
American ....do......	123,838	82,227
English ....do......	17,929	7,830
Japanese ....do......	184,331	243,542
Drills—		
American ....do......	18,460	22,814
English ....do......	2,961	4,323
Japanese ....do......	9,695	4,710
Jeans—		
American ....do......	2,310	1,780
English ....do......	102,970	131,085
T-cloths—		
English ....do......	272,774	392,992
Japanese ....do......	28,260	25,813
Lawns ....do......	10,349	26,461
Chintzes and prints.............................do......	94,962	136,488
Printed drills, etc..............................do......	12,168	13,316
Printed sateens ....do	10,181	15,596
Printed T-cloths ....do......	24,360	21,875
Italians and lastings..............................do......	388,285	452,764
Dyed shirtings, etc ....do	3,651	5,379
Turkey red cambrics, etc..............................do......	58,557	87,289
Spanish stripes ....do......	6,348	12,636
Cotton flannel ....do......	16,445	14,354
Colored woven cottons ....yards..	52,916	125,457
Velvets and velveteens..............................do......	18,819	51,912
Cotton blankets..............................piece..	26,579	31,414
Handkerchiefs ....dozens..	14,528	17,066
Towels ....do......	81,591	126,968
Cotton yarn—		
English ....hundredweight..	24	4
Indian ....do......	86,668	91,412
Japanese ....do	217,636	279,909
Cotton goods, Chinese:		
Sheetings, Shanghai..................pieces..	16,050	27,971
Nankeens ....hundredweight..	3,403	1,668
Cloth, native ....pieces..	26,764	24,776
Cotton yarn ....hundredweight..	63,872	81,704
Woolen and cotton mixtures:		
Union and poncho cloth..................yards..	38,003	83,878
Cloth ....do......	3,366	2,060
Lastings ....pieces..	1,157	1,780
Long ells ....do......	530	516
Spanish stripes ....yards..	2,675	2,656
Silk piece goods ....pounds..	29,452	87,312
Metals, foreign:		
Brass, etc., sheets........hundredweight..	889	987
Copper, sheets, etc ....do......	796	1,836
Iron and mild steel—		
New ....do......	31,175	50,972
Old ....do......	152,208	186,932
Lead, in pigs ....do......	3,744	5,504
Steel ....do......	7,160	10,020
Tinned plates ....do......	42,272	30,807



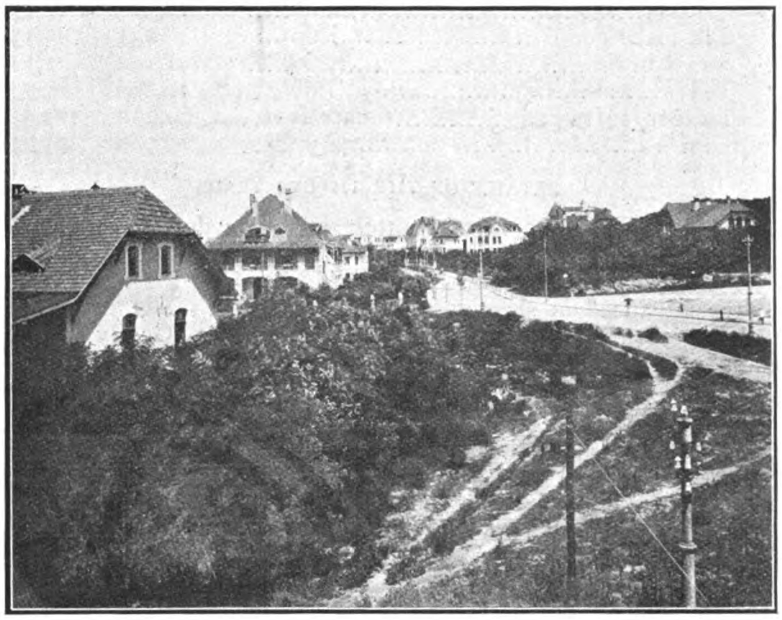
Police Headquarters.



Governor's House and Park.

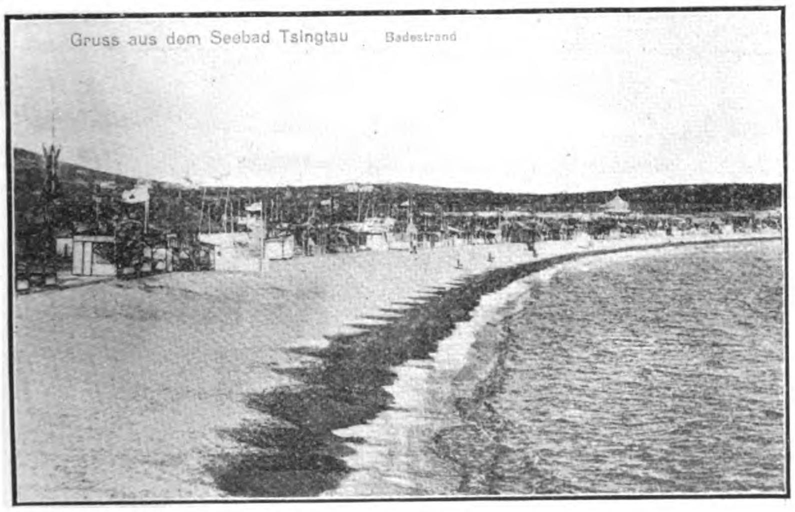


Government School.

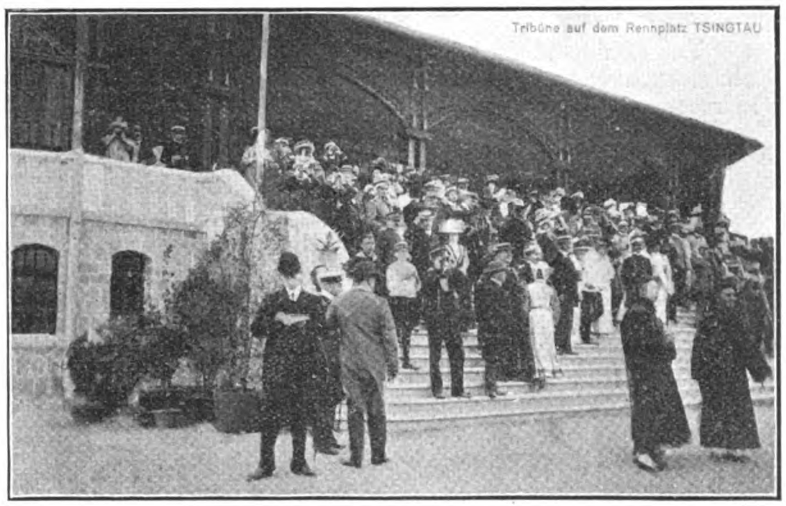


Hohenlohe Road.

Metals, Chinese:			
Iron, pig	do	2,840	3,000
Steel	do	187	609
Sundries, foreign:			
Bags, gunny	pieces	1,160,631	1,068,804
Buttons, brass	gross	105,856	118,209
Candles	hundredweight	3,377	2,663
Chinaware, etc	value	$24,458	$46,246
Cigarettes	hundredweight	201,408	307,332
Cigars	do	35,877	12,341
Coal	tons	3,023	....
Dyes, paints, etc.—			
Aniline	value	$174,747	$223,506
Indigo, artificial	hundredweight	37,193	46,904
Lead, white, etc	do	2,996	3,839
Electrical materials	value	$25,564	$29,058
Flour	hundredweight	107,580	102,385
Glass, window	boxes	4,468	16,664
Glassware	value	$16,847	$13,260
Lamp ware	do	$34,446	$44,804
Matches, Japan	gross	7,745,107	6,610,566
Mats	pieces	228,806	519,890
Mining materials	value	$34,531	$18,318
Needles	thousands	322,908	534,605
Oil—			
American	gallons	10,690,769	5,111,727
Russia	do	1,529,920	1,754,962
Sumatra	do	4,126,690	2,497,376
Paper	hundredweight	28,016	78,440
Pepper, black	do	6,353	5,421
Railway plant, materials	value	$542,245	$534,838
Seaweed	hundredweight	77,376	48,968
Soap	value	$34,235	$49,007
Soda	hundredweight	47,536	50,967
Stores, household	value	$84,134	$89,226
Sugar—			
Brown	hundredweight	213,420	88,694
White	do	88,694	52,627
Refined	do	60,114	113,880
Candy	do	38,314	26,945
Timber—			
Hard	cubic feet	283,454	23,983
Soft	square feet	2,507,969	4,659,991
Wines, beers, spirits—			
Beer, porter	value	$44,147	$34,623
Wines, spirits	do	$62,335	$74,823
Sundries, Chinese:			
Arsenic	hundredweight	3,013	5,352
Beans	do	27,164	1,551
Cereals, rice	do	59,545	72,039
Cigarettes	do	17,291	21,349
Cotton, raw	do	....	....
Flour, mill	do	50,095	95,425
Medicines	do	7,715	9,304
Oil, wood	do	17,431	17,680



The Beach in Summer.



The Grand Stand at the Race Course.

Paper—			
First quality	do	6,001	9,669
Second quality	do	103,019	89,919
Joss	do	12,924	10,875
Silk piece goods	do	231	192
Straw braid	do	1,192	1,519
Tea	do	10,800	13,749
Timber, softwood	square feet	2,369,278	2,473,356
Opium	pounds	10,948	25,884

DETAILS OF THE IMPORT TRADE.

The general increase in cotton goods was due to the greater prosperity because of the abundant harvest. American trade, however, suffered in both jeans and sheetings. The Japanese have advanced in sheetings at the expense of the United States and in jeans at the expense of Great Britain. Gunny bags are imported from Calcutta.

American canned goods continue to find a market in Tsingtau, especially in summer. The Japanese have made steady advances in the trade in refined sugar since 1911. They refine much of the Java and some of the Philippine sugar, which they sell in competition with Hongkong sugar. It is of good color, but during the summer is affected by moisture. The trade in soap is largely in the hands of the Japanese, who have flooded the market with cheap toilet soaps made especially for this country.

The heavy increase in the imports of soft timber is accounted for by the extensive building operations mentioned. The importation of wooden matches is almost entirely in the hands of the Japanese, American and European competition being practically impossible.

There was no expansion in the trade in kerosene in 1913, the actual sales remaining about the same. The importation has fallen off decidedly, as the three companies operating here realize that the market is overstocked. American oil alone dropped more than one-half in 1913, a loss which is more apparent than real. The line projected from Kaumi on the Shantung Railway should assist oil importers. Imports of oil in cases have fallen off in favor of oil in tank steamers.

CIGARETTES—WINES AND BEER.

The trade in cigarettes is very extensive, especially as it caters to the entire Chinese population. The business is nearly all in the hands of the British-American Tobacco Co., an Anglo-American concern. It recently established a tobacco farm at Fangtze, where it is proposed to instruct the Chinese in the cultivation of tobacco leaf.

There has been a slight increase in the importation of wines and spirits and a slight decrease in the importation of beer and porter. The general consumption is about the same. Whisky comes from Great Britain while most of the beer is locally made, the remainder coming from Germany.

AUTOMOBILES AND SEWING MACHINES.

The good roads and general prosperity of Tsingtau would indicate that there is an opportunity for the sale of automobiles. German cars have been sold here by an agent, but a light, cheap American machine, selling for about $500, should find a ready market.

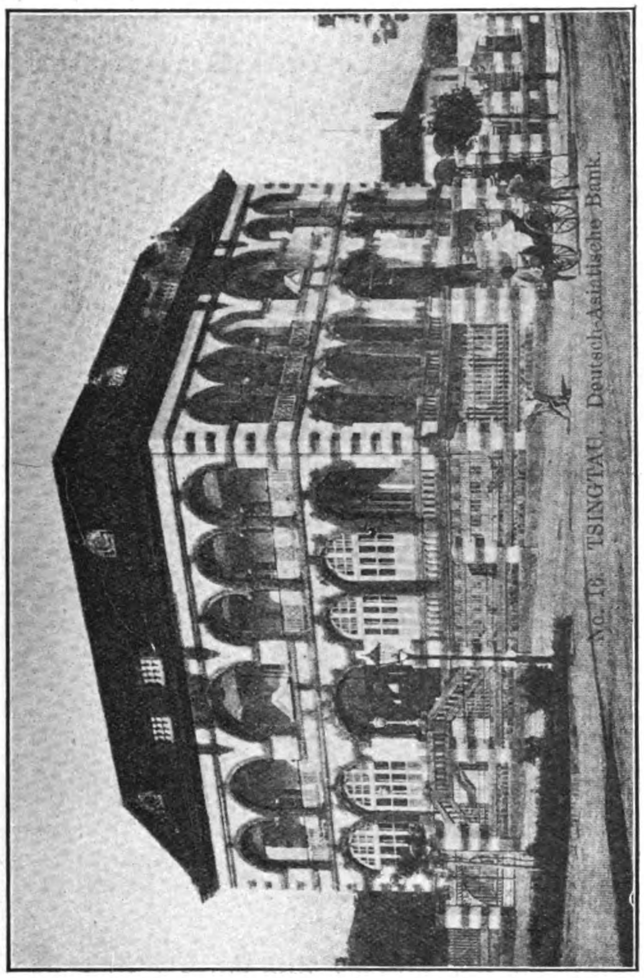
The establishment by the Singer Sewing Machine Co. of the Shantung agency at Tsingtau in 1912 has been warranted by the increase of business. More sewing schools have been opened, and the trade bids fair to develop rapidly in the next few years.

PRINCIPAL EXPORTS.

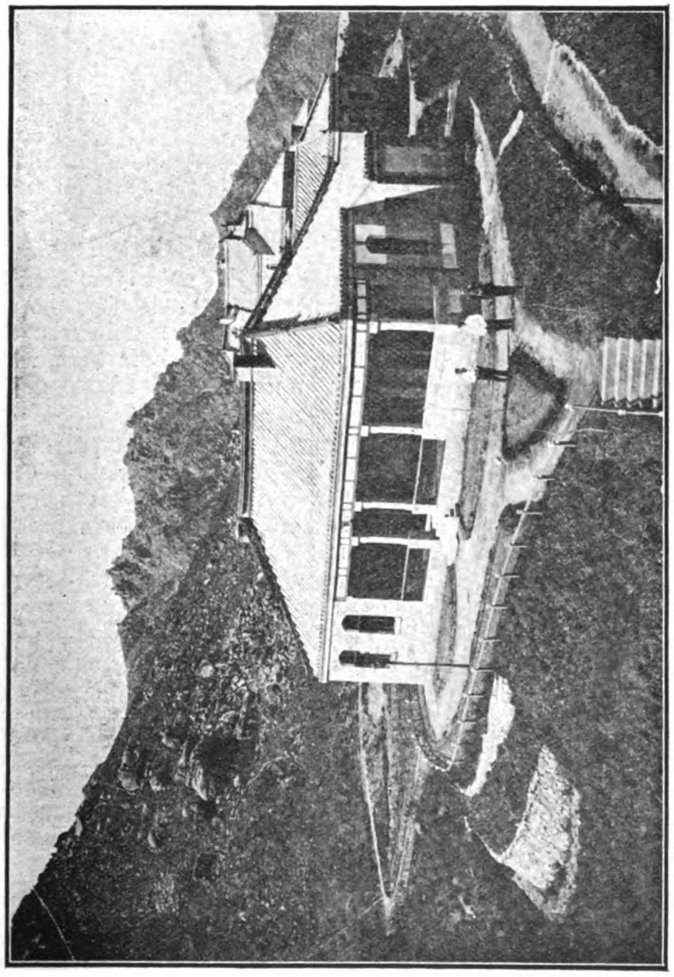
Foreign exporters consider their trade as unsatisfactory in 1913. The customs figures show a considerable gain over the preceding year, but these figures are misleading. For example they show a decline in straw braid of only about 2,300,000 pounds, while the actual loss is estimated at about $1,400,000. Since much produce is shipped on consignment to Shanghai where it is transshipped to foreign countries, it is difficult to get an exact idea of the foreign trade from the customs statistics. The principal articles of export from Tsingtau are indicated below:

VIEWS OF TSINGTAU.

1.—Post Office.
2.—Shantung Strasse.
3.—Lao Shan Strasse.
4.—Shantung Strasse.



The Deutsche-Asiatisch Bank at Tsingtau.



Bungalows on Laoshan, near Tsingtau.

Articles.	1912 (Quantity).	1913 Quantity.	1913 Value.
Bean cake......hundredweight...	94,231	160,679	$174,183
Bristles ....do......	3,111	4,900	270,802
Cattle.....................number...	16,665	28,413	834,848
Cotton, raw ...hundredweight...	92,760	64,366	736,530
Dates ....do......	....	116,645	281,014
Egg products ....do......	25,639	14,521	421,484
Eggs, fresh ....number...	20,834,840	27,056,000	130,356
Groundnuts:			
Unshelled..hundredweight...	50,661	153,132	354,643
Shelled ....do......	1,005,231	1,214,183	3,380,331
Hides, cow..................do......	38,081	51,809	936,251
Oil:			
Bean ....do......	51,668	35,572	177,232
Groundnut..............do......	307,983	196,163	1,323,156
Silk:			
Raw ....do......	9,133	6,533	1,390,947
Pongee ....do	5,260	9,192	2,105,034
Skins, goat ....number...	489,783	131,826	37,457
Straw braid ...hundredweight...	139,639	116,384	3,054,841

The principal articles exported by seagoing junks were the following:

Articles.	1912	1913
Bean cake.cwt..	585	59,673
Caps, felt ....number..	240,895	452,500
Cereals, wheat.. ....cwt..	6,044	10,928
Coal ......tons..	5,416	6,337
Cotton, raw..... ....cwt..	5,267	6,019

Articles.	1912	1913
Groundnut, in shell .. cwt..	12,469	10,564
Oil:		
Bean...cwt..	74,475	87,655
Groundnut... ......cwt..	75,611	42,331
Walnuts..cwt..	11,639	15,033

SILK AND COTTON.

The last year witnessed an increase of 75 per cent. in the export of pongee silk, the 9,192 hundredweight shipped representing $2,105,034 gold in value. At the end of 1912 the trade was brisk and prices were high, and this continued well through 1913. Tsingtau is in a favorable position to handle the pongee trade, both because it is connected by rail with the weaving districts and because it is nearer than Tientsin to Shanghai, where goods are usually shipped for foreign export. Chefoo still does a large business, but is handicapped by having a poor harbor and no railway. The Manchurian crop fell off 10 per cent. in 1913, owing to shortness of rain, while the local crop of the best quality increased 20 per cent. The trade with the United States in pongee jumped from $666 to $14,202.

Last year there was a loss of 30 per cent. in the export of raw cotton, as compared with 1912. This was the result of abundant crops and the consequent low prices in other Provinces. The customs have established a testing department to determine the percentage of moisture, which should not exceed 12 per cent. This has greatly improved the quality of the raw cotton, and only a few bales have had to be opened up and dried again.

DECLINE IN STRAW BRAID EXPORTS.

The causes for the decline in the exports of straw braid are: (1) The lessened demand in Europe and America, the results of new styles; (2) the introduction on the market by the Japanese of a paper straw braid imitation difficult to recognize from the genuine article, which new product is finding favor in some foreign markets on account of its cheapness; and (3) the substitution of coarse, cheap braids for the finer qualities. The decline in the weight of the straw braid exported has not served as a criterion of the loss incurred, therefore, since the trade in fine, delicate braids greatly declined. Straw braid is by far the greatest native export to the United States.

GROUNDNUTS, BEAN OIL, AND BEAN CAKE.

The groundnut crop was very large in 1913, but the high freight rates maintained by the local steamship companies on

unshelled groundnuts prevented foreign shippers from benefitting very extensively. There is a tendency on the part of Chinese dealers to ship to Hongkong in order to get the benefit of both the southern Chinese and European markets. This industry is doubtless rapidly increasing.

The exports of bean oil were less than in the preceding year. As Chinese buyers have been able to overbid their European and American competitors, local business men find it profitable to sell to them rather than to export on consignment, which involves risk and speculation. The bean-cake export represents a normal year in this industry. The traffic was mainly by junk.

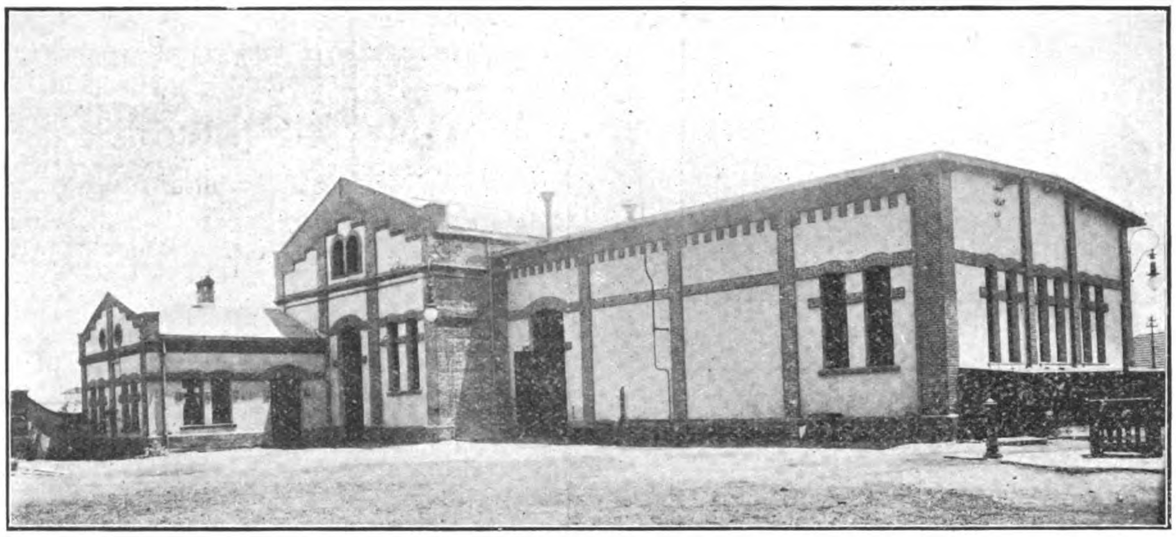
CATTLE, HIDES, AND BRISTLES.

The cattle export business is all with Vladivostok. Five firms are engaged in shipping beef in winter and live cattle in summer to this point. Tsingtau has the advantage over its rival in this trade (Tientsin) in two respects: (1) On account of the Shantung Railway it is in better communication with the interior of Shantung Province and Honan Province, the two centers of production, and (2) there is a large Government slaughterhouse in Tsingtau, which is well managed and has the services of two veterinary surgeons who are employed during the entire slaughtering season.

fell off in export to the United States, while bristles, hides, groundnuts, wool, and pongee silk increased. The declared value of exports to the United States, as invoiced through the American Consulate in 1912 and 1913, was as follows:

Articles.	1912	1913	Articles.	1912	1913
Silk:					
Pongee	666	14,202			
Raw......	483	....			
Bean oil ...	$35,572	$5,849	Straw braid ...	$1,035,305	$756,121
Bristles ...	21,912	99,146	Walnuts...	....	3,613
Egg products ...	23,095	32,846	Wool	....	12,351
Groundnuts......	2,351	15,785	Zoological specimens ...	241	150
Groundnut oil	3,187	....	Total...	1,129,261	996,006
Hides......	6,387	54,673			
Household effects...	......	1,270			
Personal effects ...	62	....			

Coinage.—The small nickel coins in values of $\frac{1}{10}$ and $\frac{1}{20}$



Electrical Works at Tsingtau Erected by the Siemen's China Electrical Co.

The hides imported by the United States are mainly cowhides. Hide shipping is hampered because Tsingtau has no adequate press of sufficient strength, and press-packing charges are exorbitant. At present it is difficult to get the measurement attainable at other ports. The year 1913 opened with high prices, which advanced until February; then a reaction set in which kept prices down until July. The market was low in October, but in December showed considerable improvement, due to the scarcity of raw materials in Europe and America. The political troubles in the summer months of 1912 in the Yangtze Valley slightly benefited Tsingtau in hide exports.

The exports of goatskins represent a normal year in spite of the fact that the customs statistics indicate a huge decline, for, in the early part of 1912, owing to the unstable political conditions in Hupeh Province, certain shipments were sent by rail to Tsingtau and transhipped to Shanghai, cargo which otherwise would have been shipped from Hankow. The great demand for bristles kept prices well advanced, but the quality of the bristles was poor, especially in the shorter lengths.

DECLARED EXPORTS TO UNITED STATES.

The declared exports to the United States were $129,718 less than in 1912, a loss of 11.5 per cent. The total represents about 5.3 per cent. of the total export trade of Tsingtau. The decline is accounted for by the decrease in the shipping of straw braid. An examination of the annual declared export returns given in the table following shows that straw braid and bean oil

Mexican dol., always exchangeable at this rate for Mexican dollars, which the German Government has issued, so far amount to 35,000 dol. The first lot of 17,000 dol., issued in 1909, disappeared from the market in a very short time, which compelled the Government to issue another lot of 18,000 dol. in 1910.

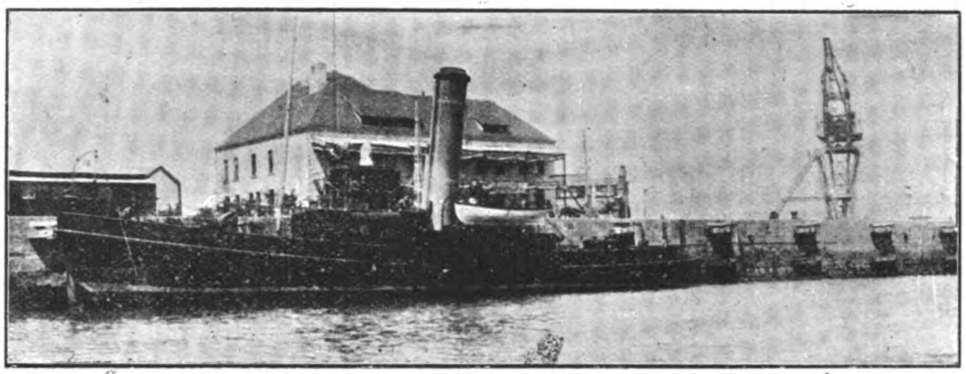
In spite of this there still seems to be a great scarcity of this coin felt on the market, and according to information received from the railway and mining companies, retail firms of Tsingtau and missionaries in the interior, it appears that the Chinese in the province are paying a premium up to 5 per cent. for nickel coin in exchange for copper cash or hard Mexican dollars, and it seems to be natural that they do so.

The value of cash, besides being bulky to carry about, changes continually, while in receiving Mexican dollars in payment the Chinese coolie runs the risk of receiving bad coin; with the German nickel coin they are always certain of its value and that seems to be the main reason for its popularity.

Currency.—Currency Mexican dollars. The lowest exchange during the year under review occurred in March when a Mexican dollar was worth 1*s.* $7\frac{15}{16}$*d.*, and the highest in November, 1*s.* $11\frac{1}{8}$*d.*

With regard to cash, exchange in February was 2,550 and in October 2,740 to the dollar.

At the end of the year 1910 the Deutsch-Asiatische Bank had 970,000 dol. in circulation in notes.



Steam Tender Built and Engined by the Tsingtauer Werft.

TSINGTAUER WERFT, TSINGTAU

The Tsingtauer Werft was established in 1900 and originally employed only a few hundred men. It was then operated under the name Marine-Werkstatt and executed smaller repairs of the German cruiser fleet in the Far East. In 1905 a large floating dock of 16,000 tons lifting capacity was launched in Tsingtau, and moored in the new harbor, where at the same time a modern crane of 150 tons lifting capacity was built. In less than one and one-half years, from unpretentious beginnings there gradually grew the present large concern, which employs now an average of 48 Europeans and 1,400 Chinese.

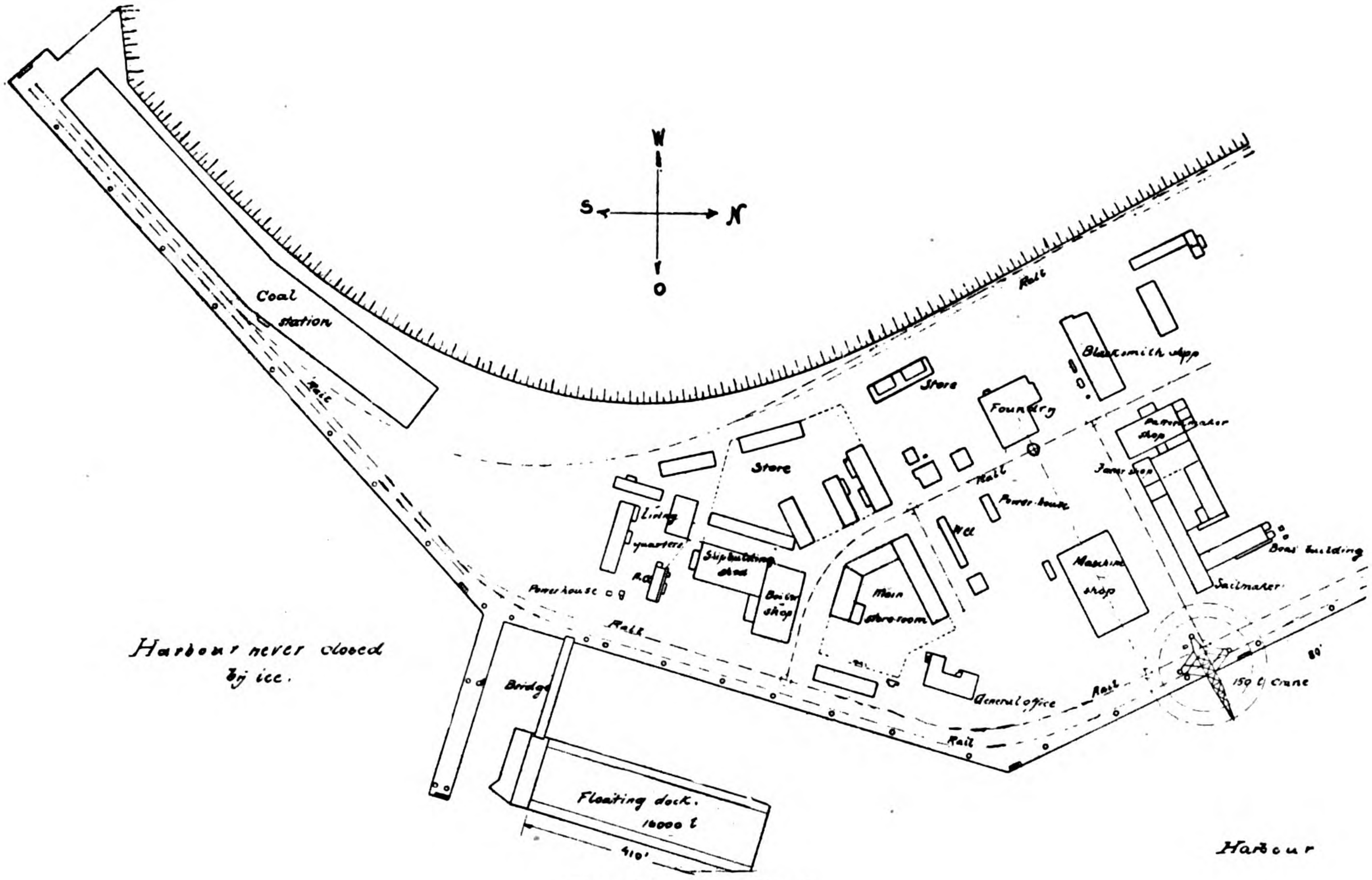
The general arrangement of the works may be seen from the accompanying plan, which shows the dock, the crane, the workshops, the coaling depot and the extensive system of railway connections.

In 1905 the large floating dock, which was built and constructed by the Guteboffnungshutte, Oberhausen, Germany, was launched and put at once into service.

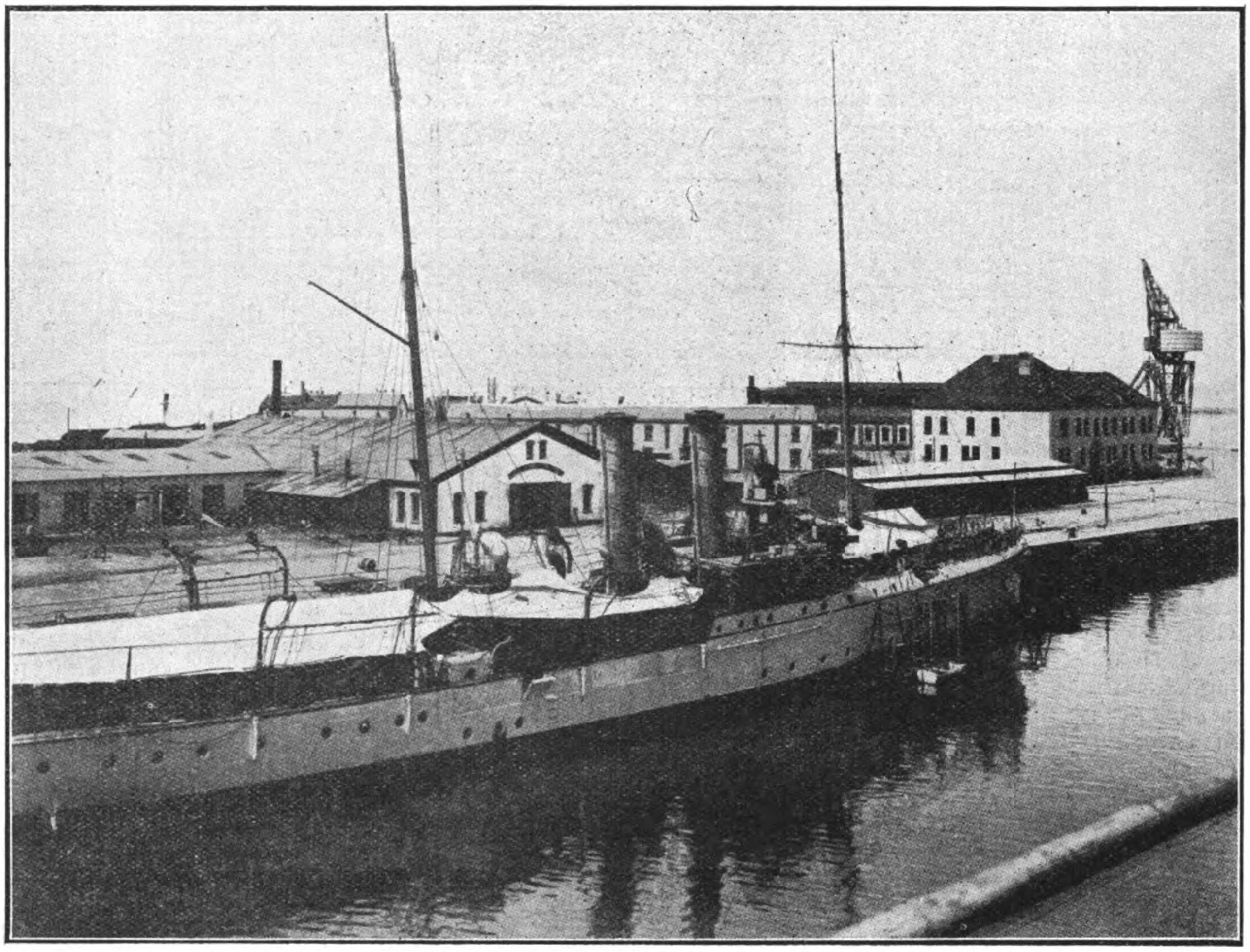
The dock measures 410 feet in length, 128 feet in breadth outside, 108 feet inside and 33 feet depth over keel blocks.

The dock's lifting capacity is 16,000 tons dead weight and it can accommodate vessels up to 460 feet in length. The dock is equipped with 10 centrifugal pumps driven by electric motors. The five dock pontoons are divided into eight watertight compartments each. The valves for each compartment are closed and opened by motors mounted on shafts, which run up the safety deck. Four windlasses, two five pumps and two 20 ton cranes at the ends of the dock are also operated by electricity. The lighting is electric and means are provided to supply the ships in dock with electric light, fresh water and steam heating. The dock is in every respect of modern design and construction and the width is large enough to allow increasing the length up to 660 feet, whenever the demands require it. The passage from the dock to the yard is provided for by means of a wide floating bridge.

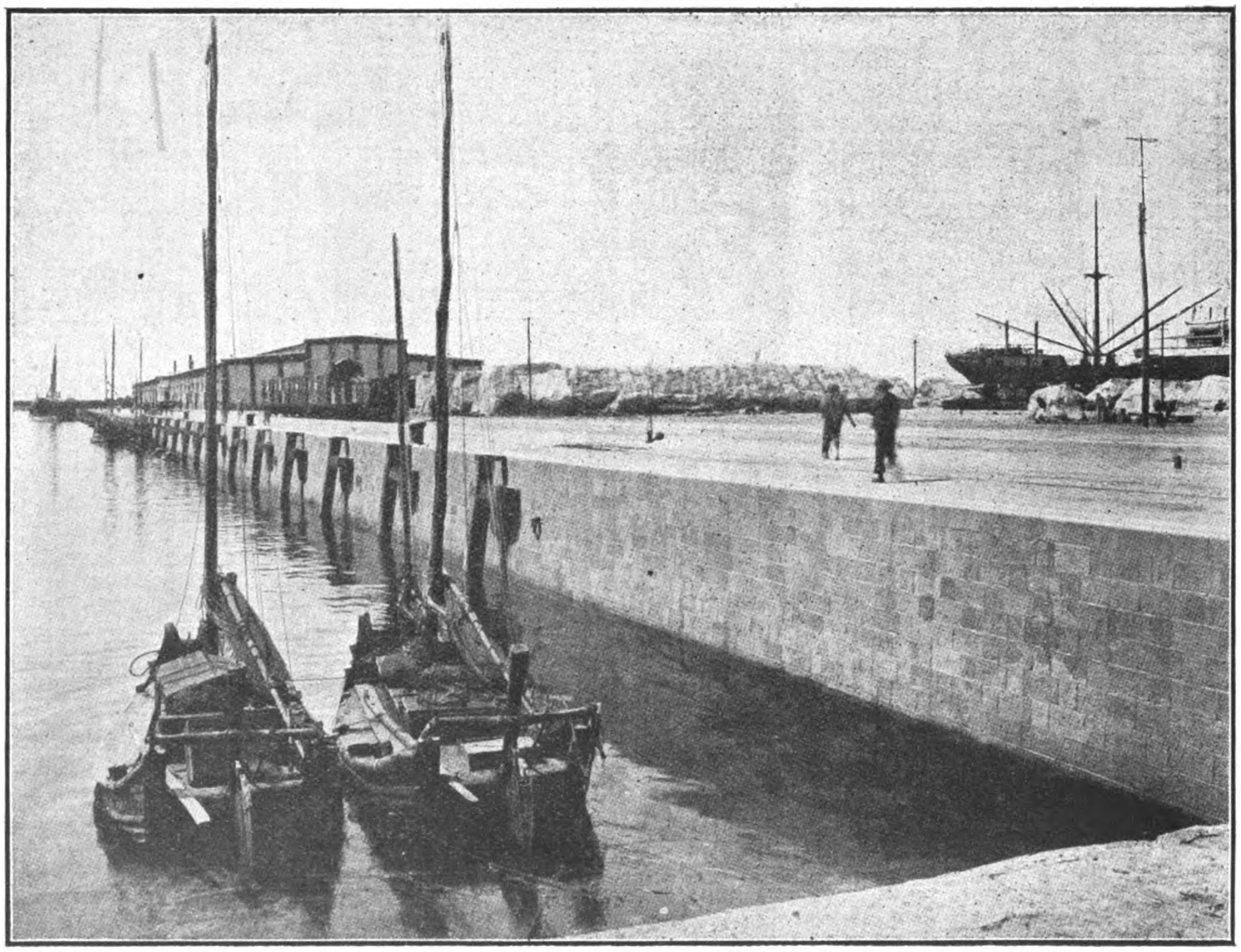
The whole length of the quays is 3,600 feet and at the



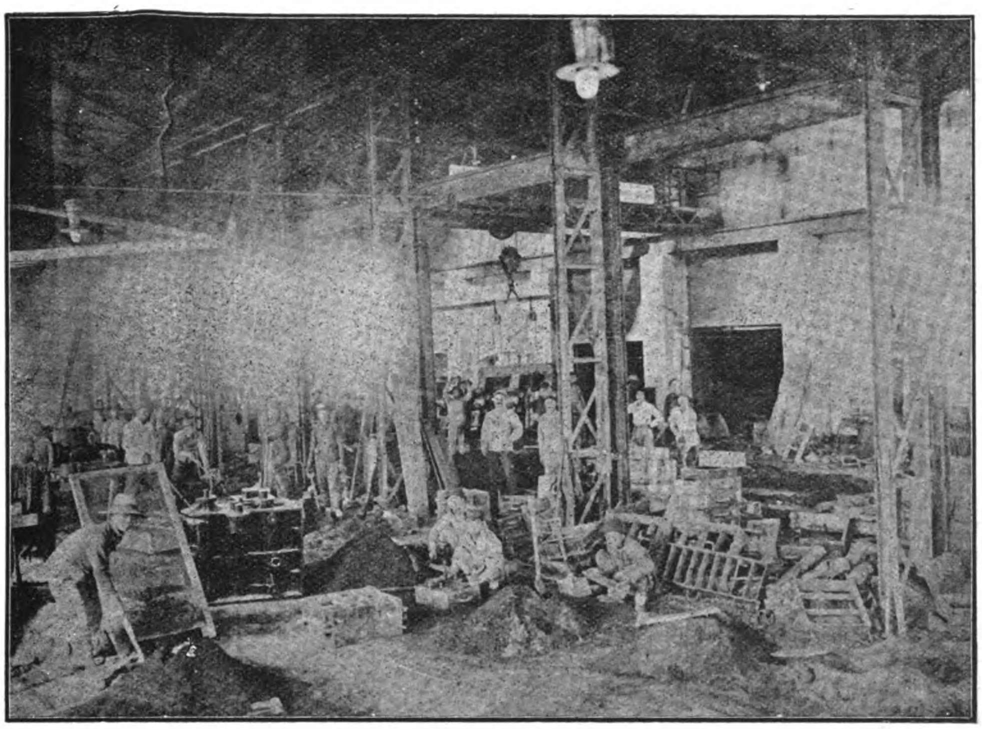
Plan of Tsingtauer Werft.



Tsingtau Wharf.



Wharf 2 at Tsingtau.

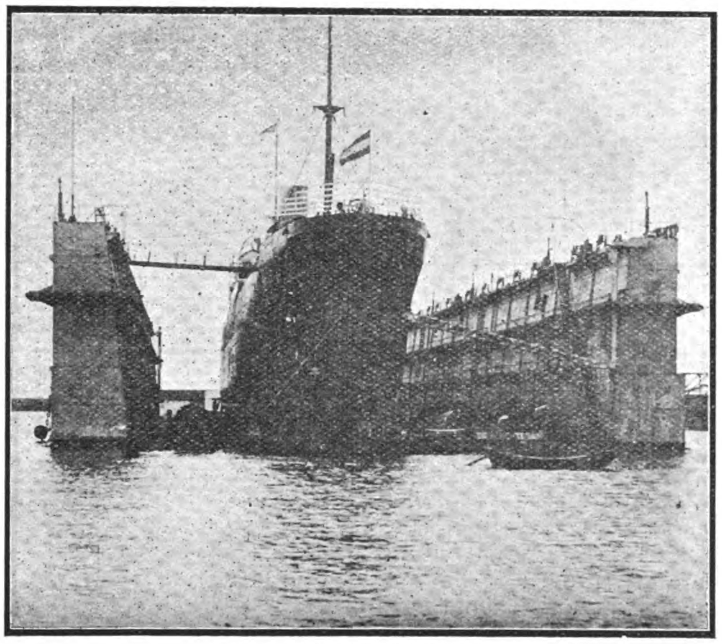


Foundry of the Tsingtauer Werft.

most convenient point near the engine shop the 150 ton crane is erected. The crane is built by the well known German firm of Bechem & Keetmann in Duisburg. It has its own power station where the current from the city works is transformed into 500 volts.

The crane can lift 150 tons with the large tackle at a distance of 40 feet from the quay, while with the small tackle 50 tons can be lifted at a distance of 80 feet from the quay.

The crane has often been tried to its utmost lifting capacity, i.e. 150 tons. Vessels up to about 160 feet in length are built under the crane and launched at a minimum of cost, transferring them by the crane into the water. It has proved very convenient for lifting boilers, smokestacks, guns, turrets and also steam launches on board of other vessels.

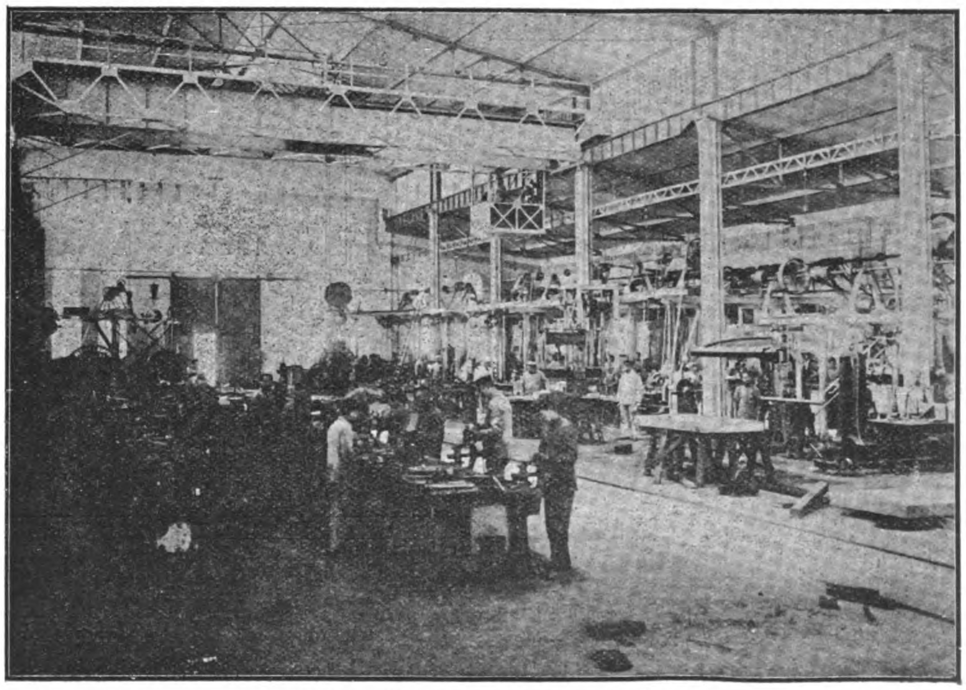


Floating Dock at Tsingtau.

The general offices are situated in the center of the yard, being within easy distance of the shops and the main storeroom.

Electricity is used throughout the whole yard for light and power. The current comes from the central station in the city. There are 3 power houses. One is for operating the tools in the different shops and supplying electric light. The number of motors in the shops is 60. The second floor of the powerhouse is used for the large accumulator battery, which can supply light for 530 consecutive hours. Another power house is used for transforming the current for the dock motors. A third power house is used for transforming the current for the 150 ton crane.

The machine and erecting shop is 160 feet long and 110 feet wide, with three bays, and is equipped with the newest electrically operated machine tools, constructed in Germany and America. The roof construction provides an ample supply of light in addition to the side and end windows. The center bay, where the heavy tools are located, is provided with a 20 ton travelling crane with a height of 22 feet above the floor. The side bays are used for smaller and medium size tools, for the storeroom and for the electricians' shop.



Machine Shop of the Tsingtauer Werft.

The boiler shop is 140 feet long and 70 feet wide and is also equipped with tools for working the largest pieces. The foundry is about 100 feet long and is equipped with two cupolas capable of producing cast iron for pieces up to 5 tons weight. A 5-ton travelling crane is running over the main bay. The brass foundry is in the same building and pieces up to one ton can be cast there.

A large drying room is for drying the molds. Near to the foundry are located the pattern makers shop and the well arranged storage for patterns.

The forge and blacksmith shop is equipped with 4 electric hammers and 30 open fires for all kinds of blacksmith work. Outside of this building are the furnaces and the bending slabs for bending the frames for the vessels.

The shipbuilding shed and the place outside in front of it are devoted for punching machines, sheers, rolls, countersink machines, planers and drills of every description, and a floor for laying out steel construction.

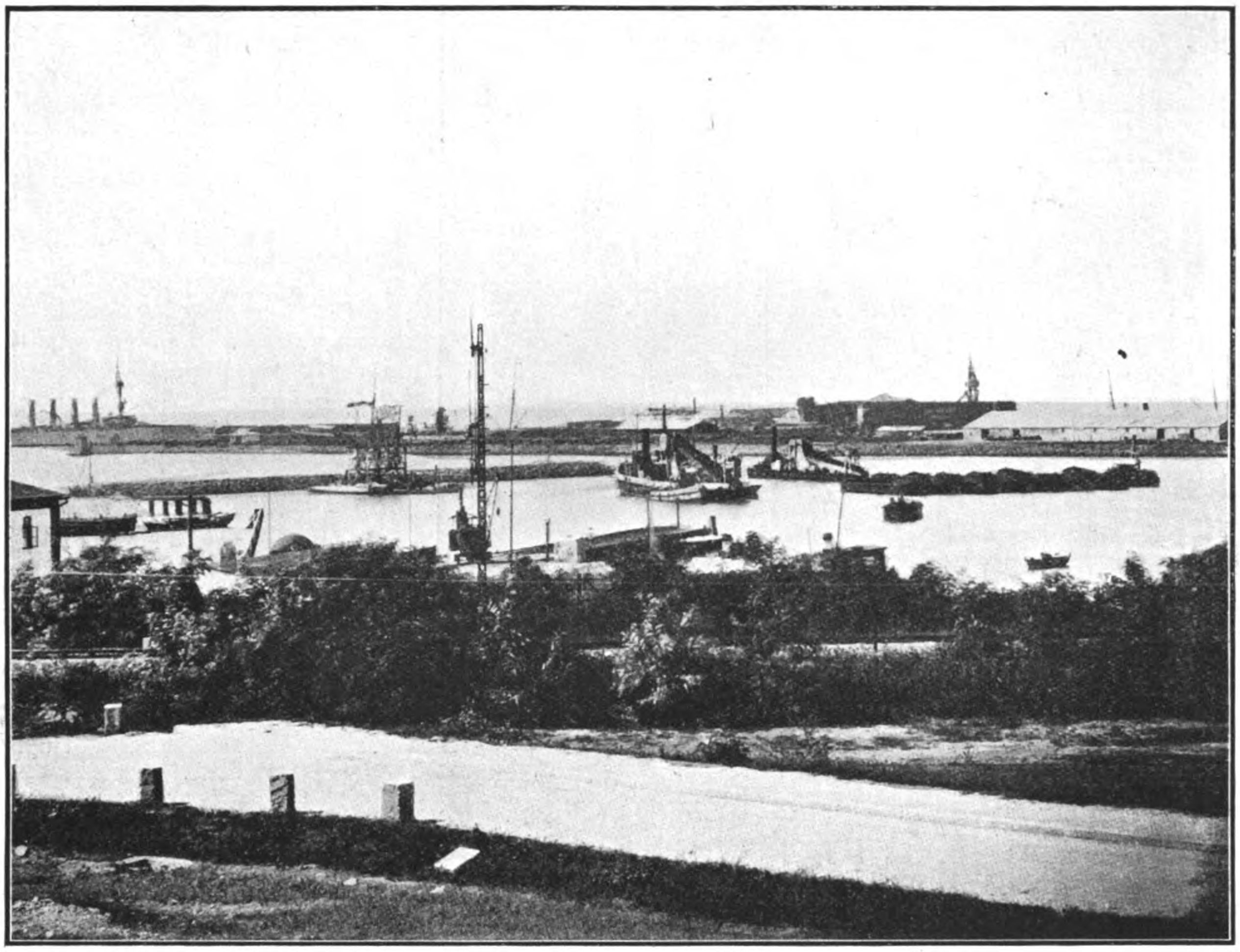
The joiner shop is capable of producing the finest cabinet work and is connected with the paint shop, and all kinds of upholstery can be done.

There are furthermore a sail-making, boat-building, coppersmith shop and filecutting shop.

A special building is equipped with a plant for nickel plating, silverplating and gilding metal.

For transporting of materials and articles between the different shops a wide system of rails is laid out throughout the yard.

There are furthermore to be mentioned the boilerhouse from where steam is supplied for heating purposes for all buildings and for ships, while laying in dock or alongside the pier. Living quarters are provided for officers and men together with galleys and bathrooms, while ships are under



View of the Harbor, Tsingtau.

repair. From the foregoing it will be understood that the works are equipped to do any kind of work, such as ships, engines, boilers, and the various items of equipment and fittings including joinery, cabinet work and upholstery.

In the year of 1902 the yard started to put in every shop a certain number of Chinese boys as apprentices to the work which number was increased every year. These boys had to learn for four years each their trade and proved to be very skilful. There are now working of the number about 400, Chinese, which form a staff of foremen or mechanics who have all been educated in the yard.

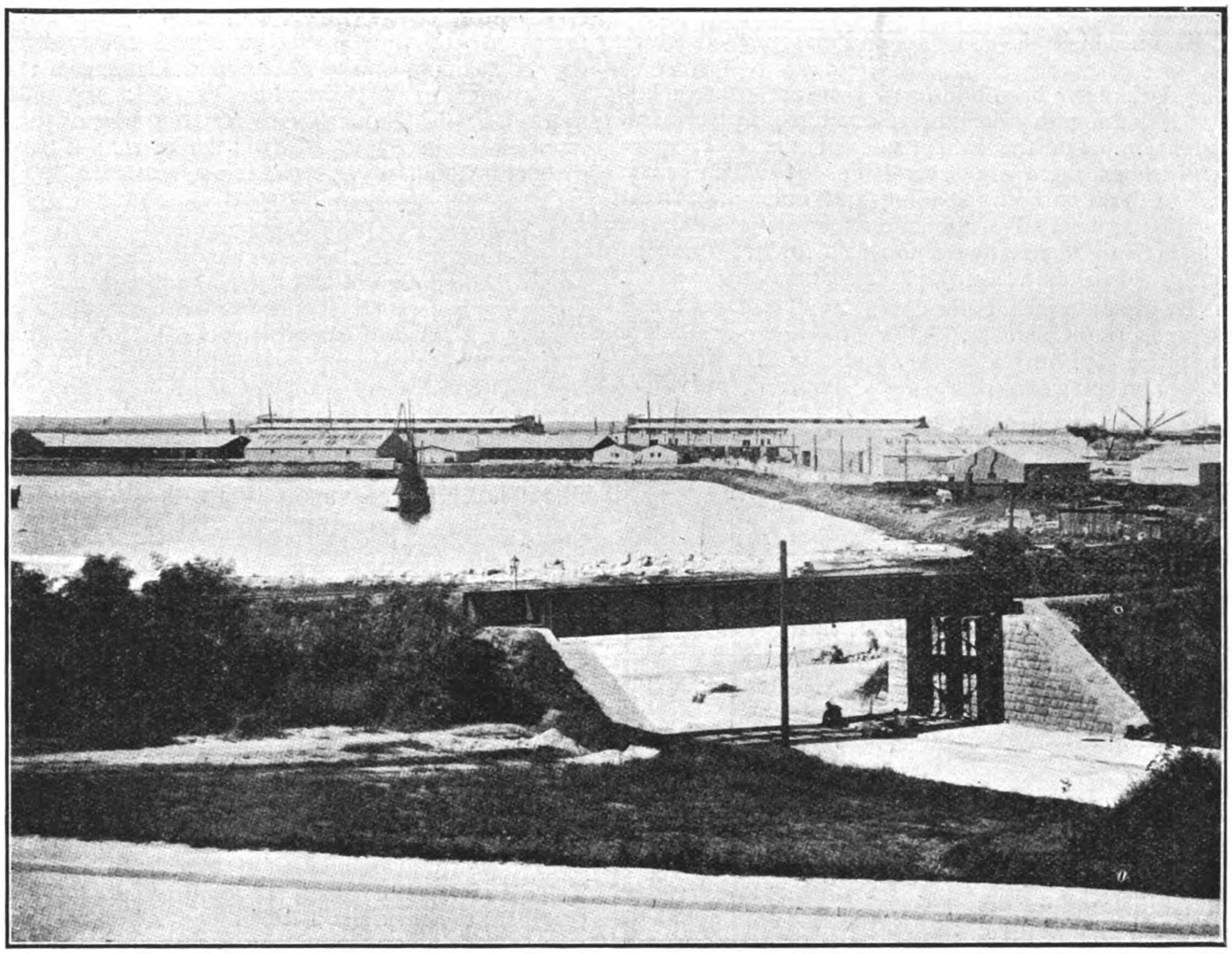
TSINGTAU HARBOUR WORKS

Kiaochou Bay, a natural land-locked harbour of great size has been used as a harbour for many centuries by the Chinese junks which trade round the East Coast. It was found that both for depth of water and land facilities that part of the bay on the righthand entrance from the ocean lent itself most to the building of harbour works. This decided the site of the German town of Tsingtau as well as although it necessitated a circuitous route for the railway to and from that point.

The small harbour shown on the accompanying plan is a natural haven used for fishing boats and trading junks. Nothing has been done there beyond providing roads along which goods are taken to and from the small craft frequenting the harbour. Hundreds of these picturesque vessels are always lying there, and the trade they bring to the port is considerable.

The construction of the great inner harbour shown on the accompanying plan was undertaken by the German Government in 1899. The width of the entrance is 280 m., and the minimum

150 Ton Crane.

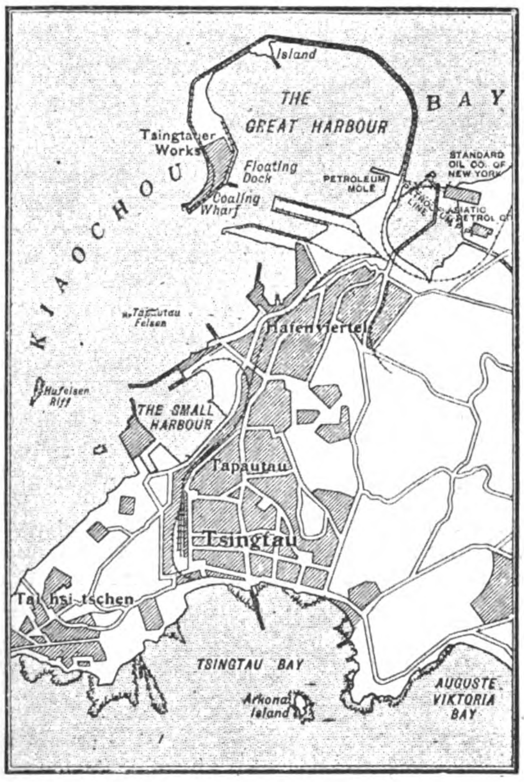


View of the Harbor, Tsingtau.

depth of water 10 m. On the right is the commercial harbour with three moles, two of which are 550 m. long and one 750 m. There is also an end berthing space of 100 m., making a total of 1,950 m. The mean depth of water alongside is 9.50 m. The naval harbour works are on the left of the entrance. There was a small island here, which was made up and built around so that it forms a large and convenient site for the workships and stores. The railway line is brought round to this point as well, and the bank made by the railway formation forms a breakwater which completely encloses the harbour. In making this, advantage was taken of a natural half-circle of rocks and small islands with water spaces intervening, so that it was not much more expensive than a land embankment.

The naval wharfage presents a front 1,000 m. long. Here there is a depth of 10.50 m. of water. There was a good deal of dredging done to obtain this, but once cleared it was found that little or no silting took place, so that the cost of harbour maintenance in this respect is small. The tidal rise is 2.60 m.

Fig. 2. shows the construction of the wharfage and piers. The walls rest on wooden piles driven diagonally and braced together. These are rammed between with sand filling from the solid bottom to the top to protect them from the attack of marine worms, and also to prevent rot from air and water contact. The outside piles are of ferro-concrete, standing at a slight angle.



Plan of Tsingtau Harbor.

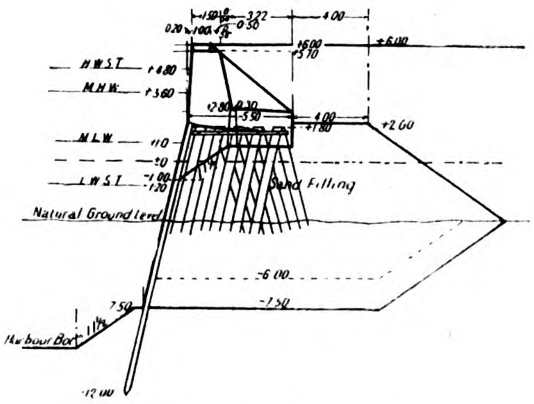
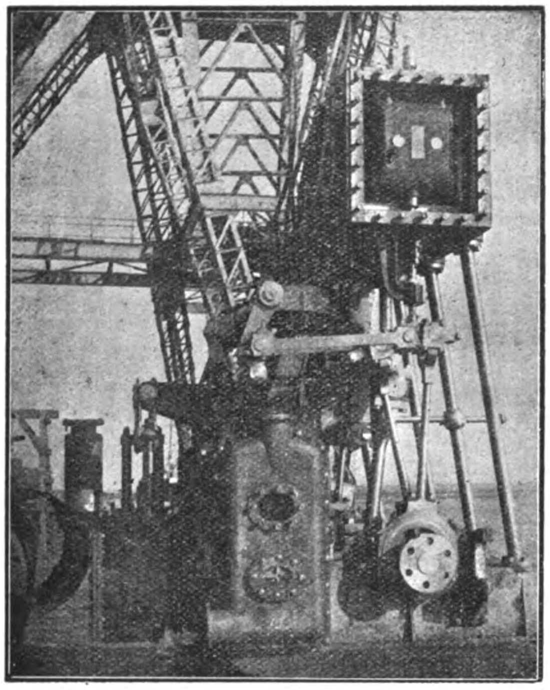


Fig. 2. Wharf Construction.

They are close together, and form a fender for the protection of the wooden piles on which the concrete and masonry structure rests.

No graving docks have been built, and none are contemplated, but there is a floating dry dock of 16,000 tons displacement, capable of extension. On the other side of the wide space occupied by workshops there are several slips on which repair work is done. At both harbours loading and unloading direct between railway trucks and vessels can be done. All the materials for the Shantung Railway, and also for the Northern Section of the Tientsin-Pukow Railway, were landed at Tsingtau.

The workshops at the naval docks are large, and equipped with the most modern appliances. They are motor-driven by electric current generated on the works, and comprise foundry, forge, fitting shop, machine shop, carpenters' shop, and everything necessary to repair or build vessels, from a trading junk to a battleship.



Marine Engines built at the Tsingtau Werft.

Tsingtau has the finest harbour in China, and these works are laid out with a view to expansion, so that nothing may be wanting to enable it to maintain its position both as a commercial port and a military and naval base.

TSINGTAU AS A SILK PORT

There are three classes of pongee exported from Shantung. The same kind of worm feeding on the same kind of leaf produces the silk for each class, and the difference in quality (i. e., color and strength) is attributed to the varying degrees of heat experienced by the worm. (There is a perceptible difference between silk produced on the north and on the south side of the same hill in Manchuria).

Honon pongee (trade name) is the best of the three classes. About 15 per cent. of the production is exported through Tsingtau, and the increased railroad facilities now afforded by the Tsingtau-Tsinanfu line will bring more by this route. Much of the remaining exports of this class goes to Shanghai, and a portion also finds its way by caraven across Mongolia to Russia.

The silk for Nanshan pongee (trade name) is cultivated within a radius of 50 miles of Chefoo. Formerly it was also woven in that district, but a large part of it, after being unreeled, is now sent to the Ch'ang-i district to be woven. There are four grades.

Shantung pongee (trade name) is manufactured from silk cultivated in Manchuria, exported from Dalny to Chefoo filatures in October, unreeled, and sent in hanks by mule to the Ch'ang-i district, where it is woven, and, formerly was returned to Chefoo for export. From Ch'ang-i to Chefoo the transit time is 7 to 15 days, depending on the weather; to Tsingtau it is only 2 days—1 day by mule to the railroad at Ch'ang Li or Weihsien and 1 day by train to Tsingtau. There are 10 grades of this class, ranging in price from $3 to $6 gold. The output from the Ch'ang-i district is about 500,000 pieces per year.

The Chinese manufacturer sells to the agent of a Chinese firm in a treaty port (Tsingtau, Chefoo, Tsientsin, or Shanghai), who in turn sells to the foreign exporter, through the compradore and a foreign expert, who passes on the grade. In Tsingtau the Chinese agents and the compradore of the foreign firm each receive a 2 per cent commission; in Chefoo the same commissions are, respectively, 1 per cent and one-half of 1 per cent; in Tientsin and Shanghai the commissions are lower because of the increased cost of transportation to these places.

Other things being equal, it is evident that Tsingtau, having direct rail communication with the center of manufacture and direct steamship communication with the principal buyers, is in possession of great advantages over neighboring ports, and these advantages have been effectively used. Since October, 1912, when the movement really began, the four largest exporters in Chefoo have transferred their business to Tsingtau. Shanghai's exporters are also represented here, and there have been new entries in the field. The most important developments have occurred since the Chinese New Year. Since that time stocks have not been replenished in Chefoo, and only 4,000 pieces were on hand there the middle of March, in contrast to 30,000 pieces in stock in Tsingtau. The silk expert of the largest exporters in Tsingtau confidently asserted that by the end of 1913 Tsingtau would be the only important market for the trade.

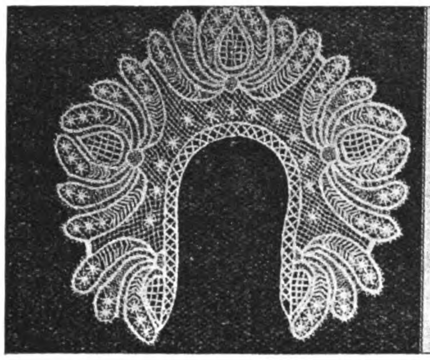
The following details of the process of the manufacture of pongee will indicate another step in the transfer of the trade to Tsingtau. The cocoons arrive in the Nanshan district in October; the chrysalis is killed by dry heat; the cocoons are stored dry for six months or longer, then softened by steam and 8 or 16 unreeled for one thread by each spindle (yield, in a good year, 1,200 to 1,400 yards from each set). The raw silk is transported in hanks by mule to the Ch'ang-i and there strung over poles and brushed with a thick gum made of beans, which makes the threads stick together; dried, and then woven on hand looms (three 20-yard pieces from each loom with two workers). The product is now heavy with gum (35 to 55 ounces per piece) and has a dark, poor color. To cleanse and improve the color 10 or 12 pieces are boiled for 3 hours in a large iron caldron together with 2 ounces of pig fat to every 30 ounces of silk. Each piece is then washed twice, usually in a stream, and flattened by rolling between wooden rollers, after which it is semidried and folded 16 times to the piece (weight, 25 to 30 ounces).

Weaving is carried on in houses which are built with three-quarters of the walls below the ground level. For this reason the business and the workers, who sleep beside their machines, suffer severely in flood seasons. The looms are of local manufacture and cost about $20 gold. A few German looms have been imported, but can not be used with success because their steel combs break the gum-coated threads. Chinese looms are fitted with bamboo teeth. It is estimated that there are 130,000 workers in the Ch'ang-i district. They earn their food, quarters, and an average wage of 4 cents gold per day. An experienced matcher of colors may receive 7 cents a day. Men under 20 years of age are employed in the filatures because their fingers are in better condition to handle the threads.

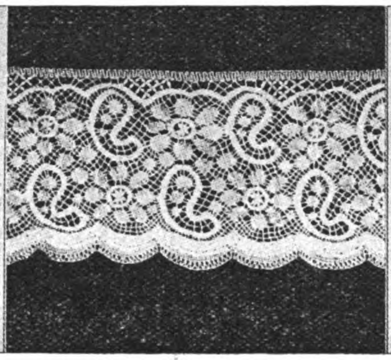
The Chinese weaver in the Ch'ang-i district formerly found a better market for his product in Chefoo; but by reason of the shorter, quicker, cleaner, and cheaper haul to the Tsingtau market, which gives him a better price there, he has recently transferred the bulk of his sales to this port in spite of the higher commissions charged there. Silk which was formerly woven nearer to Chefoo is now sent to the Ch'ang-i district to be woven in order to take advantage of the proximity of the Tsingtau market.

The raw-silk market is still controlled in Shanghai. The outside wrappings of the cocoon (waste) are also bought in Shanghai, exported to Bradford, England, made into plush, re-exported to China, and made into native coats.

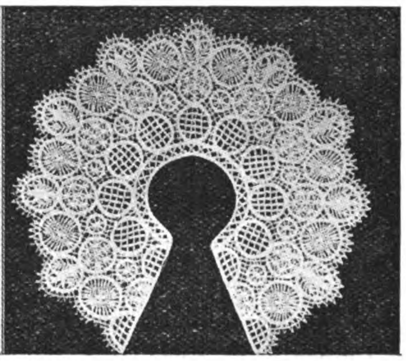
MANUFACTURE OF PONGEE SILK, HANDMADE LACES, AND DRAWN THREAD WORK



Lace Collar.



Strip of Lace.



Lace Collar.

The cultivation of silk began in China at a comparatively early period, and it is one of the oldest industries known to the country. Different kinds of silk are produced in various centers of the empire, such as Hangchow, Soochow, Szechuan, Kweichow, Honan, Shantung, and Manchuria, and all of them are of a high class, and highly favored in the markets of the commercial world, to all of which, practically, they have been introduced by the export branch of trade. In some China silks, the international trade is extremely large and prosperous, and recently the trade in the silk known as "Tussore," or "pongee," has assumed large proportions and attracted great attention in foreign countries. Large quantities of this raw silk, in hanks, are now exported to Europe and the United States of America, and it has been given a leading place among the imports of those nations, having become very popular with the ladies as material for gowns. The dress of pongee silk holds a leading position among the garments of European and American ladies, and the demand for the pongee silk is, as a result, large and steadily increasing.

For many years Chefoo has been the chief Chinese center of the pongee trade, and, although it now has a formidable rival, in Tsingtau, it still maintains its lead, and will probably continue to do so, as the best silks are produced in its immediate vicinity, and cannot be exported from any other center, unless they are transported for a considerable distance overland, or shipped, through Chefoo, to another port for delivery abroad. Two classes of pongees are handled for foreign trade at Chefoo. They are the Shantungs, the weaving center for which is Liutang, about thirty miles east of the important town of Weihsein, and the Nanshans, made in Chihsia, in the Ninghai district. Each piece of cloth is made from a particular lot of silk, and, as a result, each piece varies from every other piece in exact quality, weight, and fineness, and, to a certain extent, in color and other qualities. There are certain general grades, certain varieties of weave, certain popular weights, etc., but ladies shopping in Chinese pongees find it difficult to match pieces, and it is practically impossible to furnish any great number of pieces of a certain weight, grade, or quality.

Thirty years ago the Shantung pongee was but little known in Europe or America, though it was in great favor with foreigners resident in China. The cost price was only slightly above that of imported cotton dress goods, while it was much more durable. Its particular merit is that it can be washed without injury, losing by the process only a slight degree of its original lustre. Indeed, all pongees are washed before coming to the market, as they are made very dirty in the weaving. The length of time occupied in weaving the ordinary native standard piece, is from three to six days, according to the skill of the weaver. The inferior cloth, made in the province of Kueichow from the local wild silk is called Ko-ta-chou, on account of the lumps or nodules found in its coarse texture. A good deal is made into waterproof sheets for travelers to wrap about their bedding when it has been saturated by the oil of the varnish tree, which is a common product of the districts in which the pongee referred to is produced.

Great improvements have been effected in pongees during the last ten or fifteen years. They were originally made only in twenty-inch widths, which was later changed to 25-inch and 26-inch widths; but now the bulk of the manufacture is in 33-inch widths for ladies' dress goods, the heavier qualities, for general's suitings and other purposes, being made in 27 and 28-inch widths. Pongees were also originally made in 19-20 and 14-15 yard lengths, but now, to suit the foreign trade, quantities are made in 30 or 50-yard lengths. These longer lengths are more suitable for retailers, as they involve the leaving of fewer remnants. The houses which engage in the pongee trade are divided into those which sell and those which buy, and neither encroaches on the province of the other. There are at present about forty of the former, and twenty of the latter. As the season only lasts from November to May, these merchants are obliged during the rest of the year, to engage in other business, such as dyeing, general trade, or dealing in "mountain produce." At the head of the firm is the manager, in whom sole responsibility is vested, and under him are his assistants, divided into outdoor and indoor workers. The former are again divided into silver men and thread men, the first to cope with the intricacies of exchange dealings in transfer money, keeping in touch with the money market, the latter to collect thread for customers, to introduce buyers and sellers, and to be acquainted with the daily fluctuations of prices. The selling shops, having laid in their stocks of silk, send samples to the buying houses whose outdoor man then proceeds to the selling house to negotiate bargains. Commissions on sales are fixed at two per cent., but this figure it is said, is often exceeded.

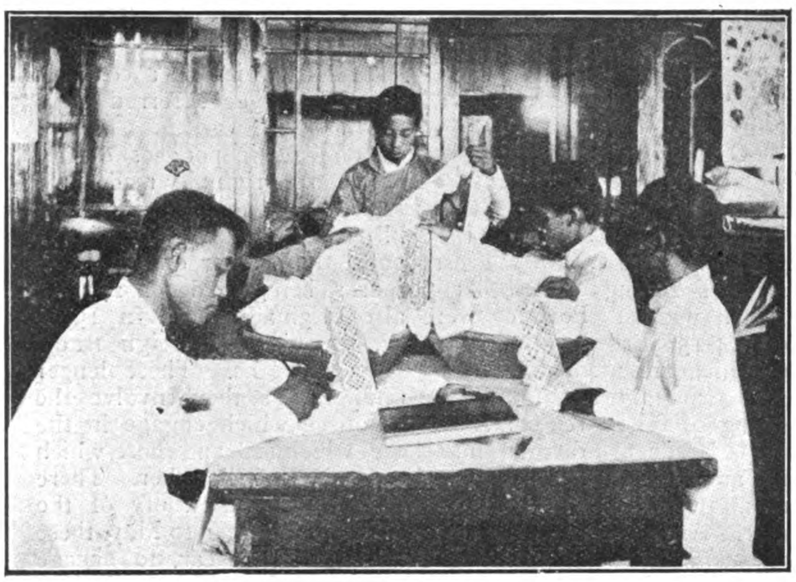
One of the largest dealers in pongees in Chefoo, is the Messrs. James McMullan & Company, Ltd., who have been engaged in the business for a number of years, and have done much to popularize pongees in foreign countries, spending large amounts annually in advertising and in distributing samples. The fact that this firm handles so large a quantity of pongees, makes it necessary for them to employ the most expert examiners. As pongee is made on hand looms, every piece differing slightly from every other piece, it can be properly graded only by these possessing experience and expert knowledge, and who handle large quantities, as frequently one lot may have to be divided into several distinct classes. The firm also maintains spacious drying grounds, and other conveniences required for carrying into execution its important work.

The vogue of silk and the uses to which it may be put have greatly increased in recent years, and as a result every

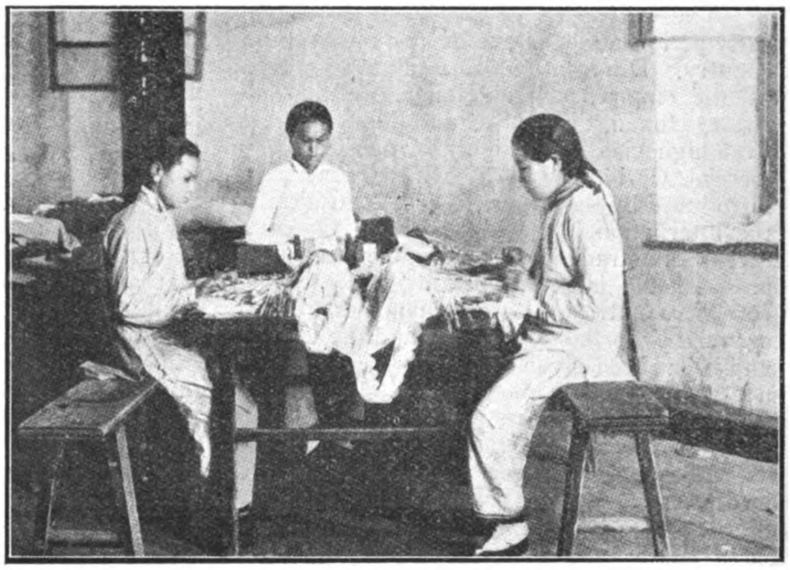
silk-producing country is striving to increase its production, and fresh sources of supply are heartily welcomed. In the special lines on which Tussore or pongee silk is employed, plush and pile fabrics made from the waste, it fairly rivals the best silk, and is far cheaper than any other class. It is deservedly popular for purposes requiring a fabric at once light, close, and resisting, as in the automobile dress industry. The Shantung pongees have become fashionable and woven Tussore is used in many ways. Its peculiar lustre and strength render it very suitable for embroidery. Fears were once entertained in Italy that pongees would interfere with the production of classical silk, but the former cannot hope to rival the latter, on account of the greater "hairiness" and thickness of its thread, and its inferior elasticity and gloss. Its true position is rather that of an ally, opposing the invasion of the markets of the world by artificial silk, which costs more than Tussore, and, with its characteristic splendor removed has not the intrinsic qualities of the wild silk. To another competitor, spun silk, Tussore opposes superior lustre.

The tendency recently for the manufacture of silk thread shown in Manchuria, is regarded as evidence that Chefoo, which is now the acknowledged seat of the pongee industry of China, with all the advantages of scientific methods and expert workers, may soon begin to feel the stress of genuine competition. An attempt has been made to establish a filature at Dairen, but, although silk of good quality was produced, the lack of a sufficient supply of skilled labor, caused a stoppage of the work, which it is said, however, may be only temporary. In any case the cost of transportation to Chefoo, will, as the quality of Manchurian-made silk improves, tend to tell in favor of the product made nearer to the producing districts. The improvement of quality is becoming increasingly necessary, in view of the bad reputation which "native raws" have achieved in the West. The Chinese occupation of Manchuria is said to be doing something toward encouraging the new industry, while the Japanese authorities have also conducted experiments with the same object in view. In the British-leased territory of Wei-hai-wei there is also a good opening for the development of the pongee industry, as land which can be used for no other purpose is available for oak culture. Silk produced by the variety of worm fed on the Cudrania, commands a better price, but experts declare that the Tussore silk could be cultivated with success.

Chefoo hand-made lace is a comparatively new industry in China, having been begun in 1894, by a lady connected with the American Presbyterian Mission. She had no idea of founding an industry which would become a source of wealth to investors, her only object being to introduce her scholars to a new art, which would prove of benefit to them as an occupation for their leisure hours, and as producing useful and at the same time ornamental articles for the household use. The missionary laid the foundation for the establishment of a profitable industry in China, although she can scarcely be said to have established it herself. She returned to America soon after having initiated her pupils into the art of lace-making, but the next year, 1895, Mrs. James McMullan founded the Industrial Mission School at Chefoo. It required careful handling, much time and the expenditure of much money to start and maintain this school, which devoted its time to the making of hand-made lace, but the idea, once implanted in the public mind, developed rapidly. Scholars leaving the school taught lace-making to their friends, and the outfit required for the work being simple, easily made, and not expensive, the workers devoting themselves to the industry soon became numerous, and the industry began to prosper. The outfit consists of a simple pillow, or padded board, bobbins, pins, etc., occupies but a small space, and lace-making became recognized as particularly well suited for a cottage industry. At present many thousands of women and girls are engaged in making lace in the Chefoo district, and the market for their products is a large one and steadily increasing with the progress of the years.



Measuring Lace.



Lace Making.

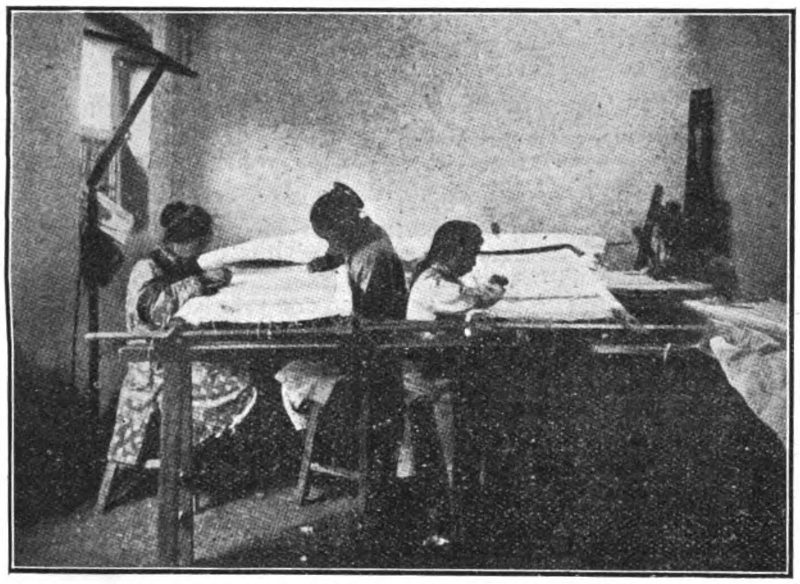
The object proclaimed by the Industrial Mission Schools is to give the girls who attend it a knowledge of the Gospel, a useful education, and enable them to earn something by lace-making to enable them to help pay for their education; also to place them in a position, if necessary, to aid them in earning their own living after leaving the school. Rented premises were occupied by the school until 1902, when Mr. McMullan purchased land near Chefoo, and built a structure which has been the headquarters of the interesting work since. The pupils are apparently very happy in their study and work. If industrious and expert, they can, in the time allowed for work, earn more than enough to pay for their support. Though the schools are of a pronounced missionary character, no appeals are made for funds to aid in their support, the cost of their maintenance being paid by the firm of James McMullan & Company.

Originally the lace was made in cream and white silk thread, produced in Shantung, and quantities are still made in this thread. But during recent years by far the larger quantities are made from imported linen and cotton threads. James McMullan & Company have taken considerable trouble to procure the threads best suited for making the laces, and they now import large quantities of linen and cotton threads from Great Britain, which are specially manufactured for them, and from which the best laces are made. The workers find that they can secure a much better price for the laces made from these high class threads, and have therefore almost entirely stopped purchasing the cheaper threads of various shades.

This insures uniformity of color and quantity in the laces made. The best of them are made by scholars trained in the industrial schools. Unfortunately, however, large numbers of workers have begun lace-making without proper training, and as a result, quantities of inferior laces are produced. The careful inspection of the work has become paramount on this account and James McMullan & Company employ several expert examiners at Chefoo, and have now established another receiving center at the German port of Tsingtau.

The excellencies of the laces made at Chefoo are proved by the fact that they were awarded gold medals at the St. Louis Exposition, U. S. A., in 1904, and a diploma of merit in the Australian Exhibition of Women's Work, at Melbourne, in 1907, which are the only two places where the company has exhibited them as contestants for prizes. The demand for the Chefoo laces is now very considerable the world over, and absorbs all that are made of first-class quality. A great variety of patterns of laces are now manufactured, as also lace collarettes, cuffs, ties, mantillas, scarfs, doilies, lace coats and dresses. Some of the lace patterns made are shown in the accompanying illustrations.

A few years after the introduction of the lace industry to Chefoo, the drawn-thread and embroidery industry was established in the district. In the beginning the drawn-thread work was done exclusively on pongee silk, but of late years Chinese grass cloth and Irish linen have been largely used in the industry. The linen is imported by James McMullan & Company directly from Belfast, Ireland, and is the finest that money can purchase. Many beautiful articles are manufactured to adorn the home or add to its facilities for comfort, such as table-centers, luncheon sets, tray cloths, piano and sideboard covers, cushion covers, bed-spreads, and window curtains. The drawn thread work, though a great industry in Chefoo, has not spread itself into the country to such an extent as the lace-making industry. Most of the work is done in factories in Chefoo, so that if goods are ordered that are temporarily out of stock, they can be made promptly to fill all requirements. In silk lace and drawn thread work, the differences in workmanship and materials used are so great that opportunities are afforded to suppliers to substitute inferior goods to those ordered, and it is a result exceedingly important to firms engaged in these industries to place their orders with thoroughly reliable houses.

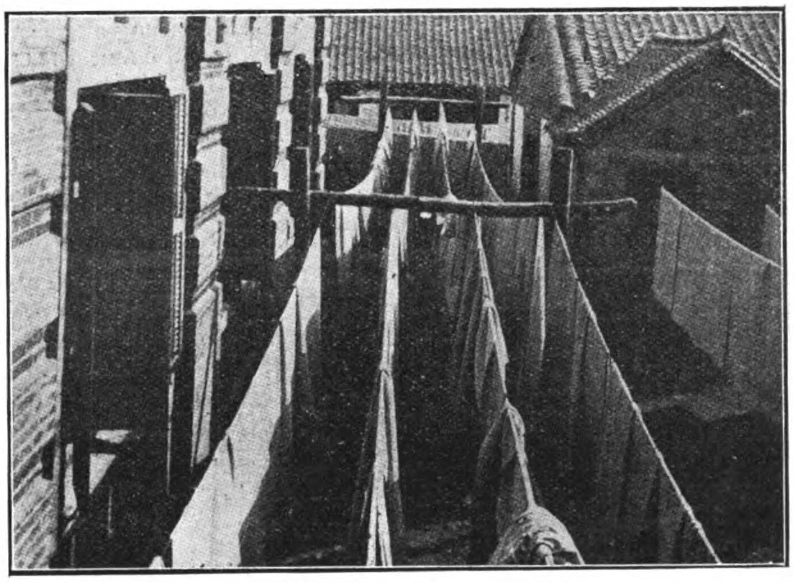


Drawn Thread and Embroidery Working.

In the export branch of these Chefoo industries, the demand for the products is extremely large at all times, and is steadily increasing in volume year after year. The great reduction made in the duty on pongee silk entering the United States of America, by the enactment of the Underwood tariff law, has removed a serious handicap against the growth of consumption in the United States, though that consumption has always been very large. The duty is now only 45 per cent. ad valorem, and as pongee silks are now lower in value in the home market than they have been for many years, they can be sold, even with the duty added, at a very moderate price. A great increase in the volume of the export trade of China with the United States is considered certain under the favorable conditions now prevailing.

The experience of James McMullan & Company, in the course of its business career at Chefoo, is an object lesson for foreigners contemplating the establishment of a business in China. Like every other successful foreign house in the Chinese Empire, this firm has had to meet with bitter competition from the native business houses, competition which it has been difficult to struggle against successfully, and made harder still by the natural opposition caused by race differences. It has succeeded in its struggle to establish a profitable business, purely by the exercise of keen tact and unbending energy.

In rearing the silk worm the early stages are somewhat differently managed in the case of the autumn crop, when the weather is warm. The males and females are then tied together with hemp thread or with the silk worm grass, seven or eight inches apart, and after separation the females are conveyed in baskets to the hillsides, where they are tied to the branches of the oak trees until they have deposited their eggs, so that the infant worms, hatching out in their natural habitat, are enabled to begin feeding without delay. The moths are fed to the poultry, the males being occasionally eaten by the peasants themselves, but the females are considered unfit for human consumption. When the eggs hatch indoors, the infant worms are not taken out to the oak plantation until after their first mute, and are treated in either of two ways, according to convenience. One of these methods is called Han Tun, or dry mound, in which the worms feed on young branches of oak, two or three feet long, tied in a bundle, and placed in vessels containing water. The other method is called Shui Chang, or "water yard," and the worms feed upon branches similarly cut and placed in the mud or sand on the banks of a mountain stream. In both methods care must be taken that the place is well sheltered, and not too much exposed to the winds. In Japan the eggs, which have been kept in a box, are, about ten days before hatching, pasted with starch made from the roots of a fern named warabi, upon eggs cards, each of which bears about sixty eggs. These cards are securely fastened to the trees, and the paste prevents the eggs from being washed off by rain. Sometimes a wooden plate takes the place of the cards. About one million eggs are allowed to one acre in Japan.



Drying Pongee Silk.

In indoor rearing, much care must be taken to keep the water in the tubs, in which the cut branches rest, always fresh and clean. These receptacles must be stoppered, or the worms, which are fond of water, will descend into them and be drowned. Close attention has been paid to the subject of rearing indoors

by breeders in Europe, where considerable success has attended their efforts, and minute directions are given as to the precautions to be observed. In China, however, it is a recognized fact that the worms should be taken outside, to feed in the open as soon as possible, because in their natural surroundings they are less exposed to danger from the attacks of disease than those reared in Europe. When carried in the baskets the worms should not be allowed to come in contact with each other.

The plantations on which the worms are reared should be divided into three parts, and two-thirds of the area reserved for the last stage of the worm life, during which they are most voracious. The number of seed cocoons necessary for a flourishing plantation is variously stated as ranging from four to six thousand, and from these, counting one hundred eggs as the average laid by each female moth, two or three thousand worms will be produced. By no means will all of these worms reach maturity however. In good years 150,000 is considered a humper crop, while an average is 100,000, and in poor years the farmer is lucky if he gets 50,000 cocoons. The autumn crop yields nearly double that of the spring, because climatic conditions are better. The plantations should be on sloping ground, facing southeast. No trees should be planted near a dusty road, or in damp, low-lying situations. If the wood is too luxuriant, it should be thinned out, and paths should be constructed through the plantation, so that ready access may be had to the worms. Lights should be kept burning at night to attract noxious insects, and burn them in the flame. In China women are not allowed on the silk plantations, as their presence is supposed to be pernicious to the worms, which are said to entertain a strong dislike for the weaker sex. The same rule is observed in the Indian wild silk plantations. The varnish tree also should be destroyed, as its emanations are fatal to the worms. The danger from this tree, however, only exists in Shantung. The plantations should be swept and garnished in early spring and nests or eggs of other insects removed, when found, together with any substance likely to prove unsanitary.

Pongee silk is a prime favorite with ladies of the United States for the manufacture of garments. As a result, the exportation of pongees to America is a large and prosperous business, absorbing the energies of many Chinese houses.

COTTON IN SHANTUNG

Up to the year 1910 cotton produced in Shantung attracted very little attention. But, since then, as the amount of its exportation to Shanghai through Tsingtau increased, foreign as well as native merchants of that port began to look upon it as possessing a certain degree of importance.

The province experienced especially good harvests during the last few years, and an immense quantity of cotton was shipped from Tsingtau to Shanghai, with the result that it has become an important article of trade as well worth investigation as beans. Although the exact amount of cotton exported through the Port is unknown, if the investigations made by German Consul as well as Chinese merchants are put together, Shantung cotton shipped out through Tsingtau during 1910 and at the beginning of 1911 seems to have been as follows:

January, February and March	1,445	piculs
April, May and June	3,356	"
July, August and September	248	"
October, November and December	10,503	"
January, February and March 1911	15,886	"
April and May,	5,094	"

For many years, cotton growers of Shantung imported American seed and tried to improve the quality of native cotton. In consequence of that, there are two kinds of cotton now produced in the province,—native and American. But it has been proven that American cotton transplanted in Shantung will gradually lose its original quality, until by the third year it is completely degenerated. Again, cotton raised from American seed is longer in staple and better in appearance than the native product, but there is practically no difference in price between the two.

The best Shantung cotton is produced in the district around Lintsing, especially in Tungchang Fu, as the result of years of effort to improve the product by importing the seed from America. It is true that there are several places in Shantung and Chihli, where cotton as good as the Lintsing product is raised, but there is no district, from the entire area of which a good variety of cotton is produced in such abundance as at Lintsing.

The special feature of Shantung cotton is that it is quite free of moisture, owing to the extreme dryness of the climate. Humidity contained in it is very much less than that which is found in cotton raised in the Yangtsze Valley.

In an ordinary year, the crop of Shantung cotton is estimated at about 200,000 piculs. The greater part of it is consumed in the eastern and southern parts of the Province where cotton is scarce, and the balance is shipped abroad after being pressed at Tsingtau. Export to Tientsin is increasing from year to year, but the bulk of cotton for foreign shipment is sent to Tsingtau via Tsinan.

Other districts where cotton is produced in large quantities in Shantung are Kaotang and Hsiatsin. According to the investigation made last year the amount and value of cotton produced in the two places during 1912 is said to be as follows:

	Kaotang.	Hsiatsin.	Total.
Area	8,000 ching	7,000 ching	15,000 ching
Amount of annual production	32,000 pcls.	30,000 pcls.	62,000 pcls.
Value	$3,200,000	$2,900,000	$6,100,000

Out of this amount not more than 40 per cent. is consumed in the province and the balance is exported abroad.

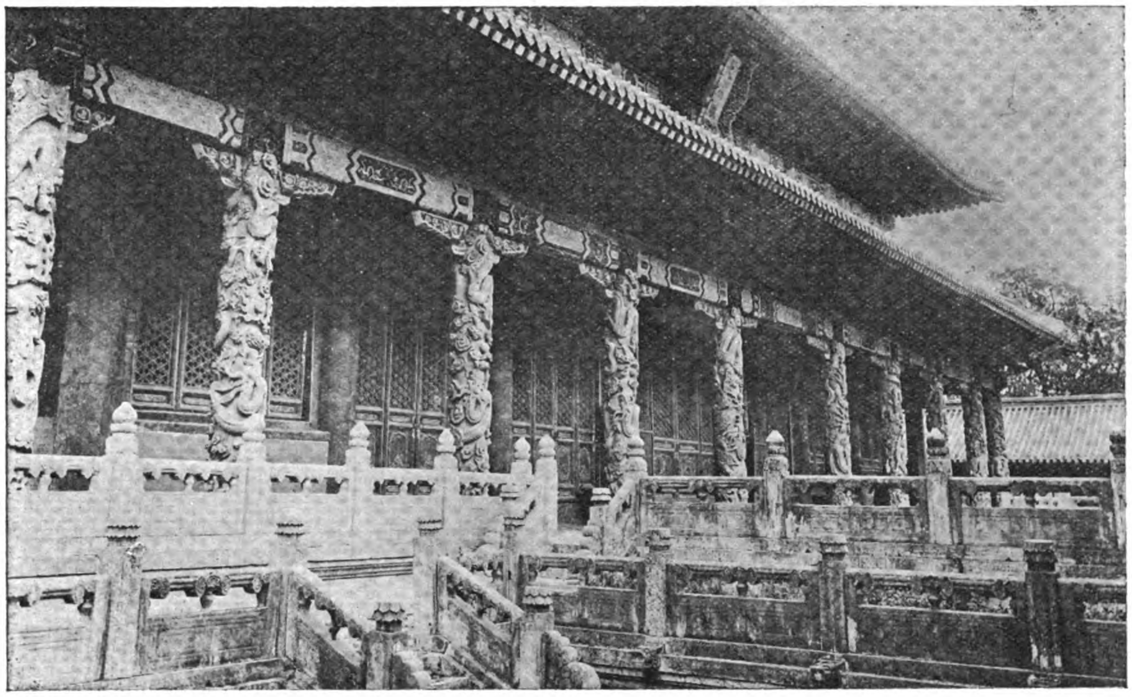
Shantung cotton marketed at Tientsin amounts to about 40 per cent. of the entire product in Shantung. This is partly shipped to Tientsin and Tsingtau, and partly consumed by local people. Cotton transactions are invariably carried on through the native wholesale dealers. They have very close connection with brokers and cotton growers, and as the result of the established customs of many years their influence is unsurmountably strong. As it is, all the attempts of foreign firms at Tsingtau to purchase cotton directly from native growers without asking the assistance of the wholesale merchants and brokers have so far achieved no success. Recently three or four foreign merchants at Tsingtau combined and are trying to buy cotton directly from growers, but success seems to be far ahead in the future.

Ginned cotton is generally packed in bales each weighing 55-85 catties including the tare, the weight of the latter being estimated at 3½ per cent. The contract price of foreign merchants during the year 1912 was Tls 21-22 per 100 catties laid down at Tsinan.

About seventy-five silver cents per bale are required as the expenses for transportation from Tsinan to Tsingtau including the charges of loading in the steamer. The difference between the prices of cotton growers and a wholesale merchant at Tsinan is 7—10 per cent. of the current price. Out of this, about 2 per cent. constitutes the freight from the place of production to Tsinan. The farther away the place of production from Tsinan, the higher the freight, but the price of cotton at Tsinan is not affected by it, as it can be bought cheaper as the distance becomes greater. The balance of 5 or 7 per cent. makes up the commission of (1) small brokers, who go around the country and buy cotton from growers, (2) larger brokers who purchase what the former collected, and (3) large wholesale dealers at Tsinan.

Only a small portion of Shantung cotton exported from Tsingtau is shipped to Japan, the bulk being sent to Shanghai, where it is consumed at spinning mills. The freight from

THE TEMPLE OF CONFUCIUS



FACADE OF THE TEMPLE OF CONFUCIUS.

THE MARBLE COLUMNS.

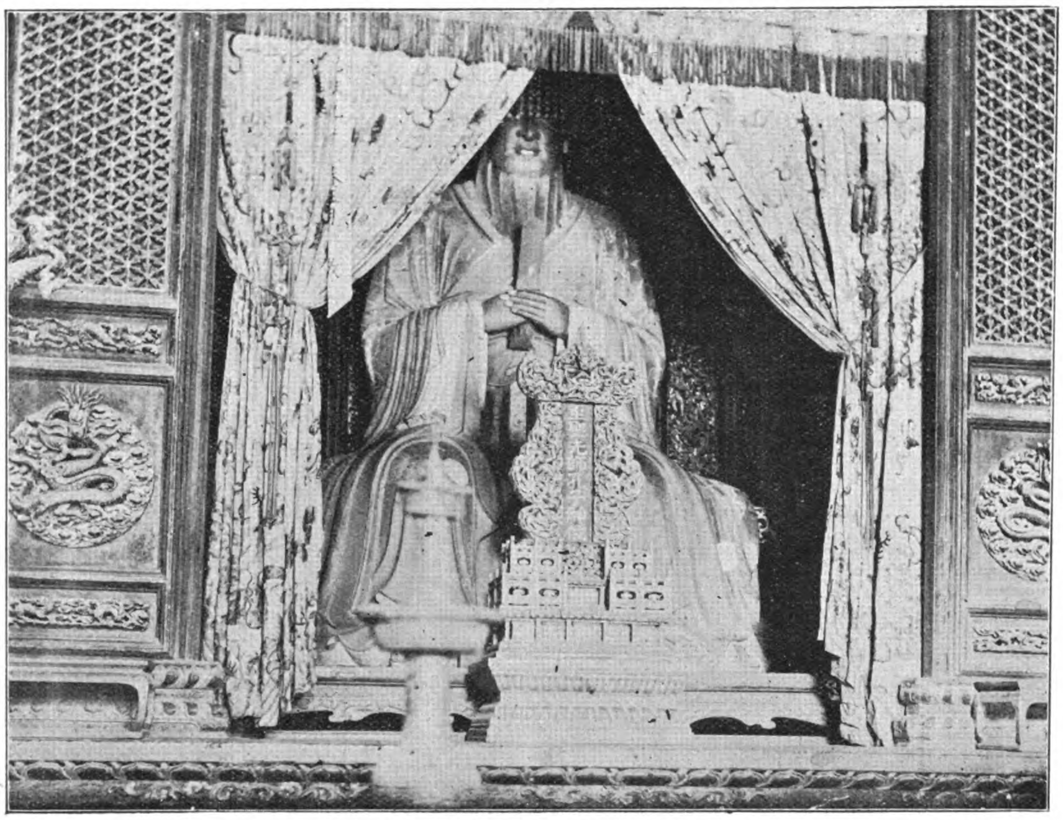


Image of Confucius in the Temple at Chufu.

interest, historically speaking. These are the Grave of Confucius and the Sacred Mountain Tai Shan. Confucius was buried in the year 478 B.C., at his birthplace at K'ufu near Yenchowfu. There lives at K'ufu to-day the seventy-fifth lineal descendant of Confucius, on a large estate belonging to the descendants of the family of Confucius. The grave of Confucius with those of his descendants of 74 generations makes one of the most picturesque and one of the most unique spots in all of China.

This family cemetery is encompassed in a wall, 8 to 10 miles in circumference. The interior makes one vast grove, trees having been planted there since the burial of Confucius 25 centuries ago. Within a mile from the entrance to the Confucian cemetery is the Confucian Temple, a set of beautiful Chinese temple buildings, with yellow glazed tile roofs amidst a grove of ancient cedars. Here we find also the ancestral hall of the descendants of Confucius. In close proximity to the Confucius Temple is the home of the only surviving descendant of Confucius. The gentleman, Duke Kung, lives here in a little principality of his own. He receives callers. The Grave of Confucius, the Confucian Temple, and the residence of the seventy-fifth lineal descendant of Confucius together make one of the most interesting show places of China. These are within easy reach of the Tientsin-Pukow Railway, being but 6 or 7 miles from Yenchowfu, the halfway station on the railway between Tientsin and Pukow. Visitors may reach Yenchowfu from Tsingtau over the German railway to Tsinanfu, where they may connect with the Tientsin-Pukow line, or from Tientsin or Pukow, opposite Nanking on the Yangtze River.

The governor of Shantung is contemplating the construction of an automobile road from Yenchowfu to K'ufu and the operation of a sight-seeing automobile over this road during the spring and autumn seasons when tourists are most likely to visit this interesting spot. Tourists will find the spring or autumn months the most favorable for visits to Confucius's grave.

Another spot of great historical interest in Shantung is the

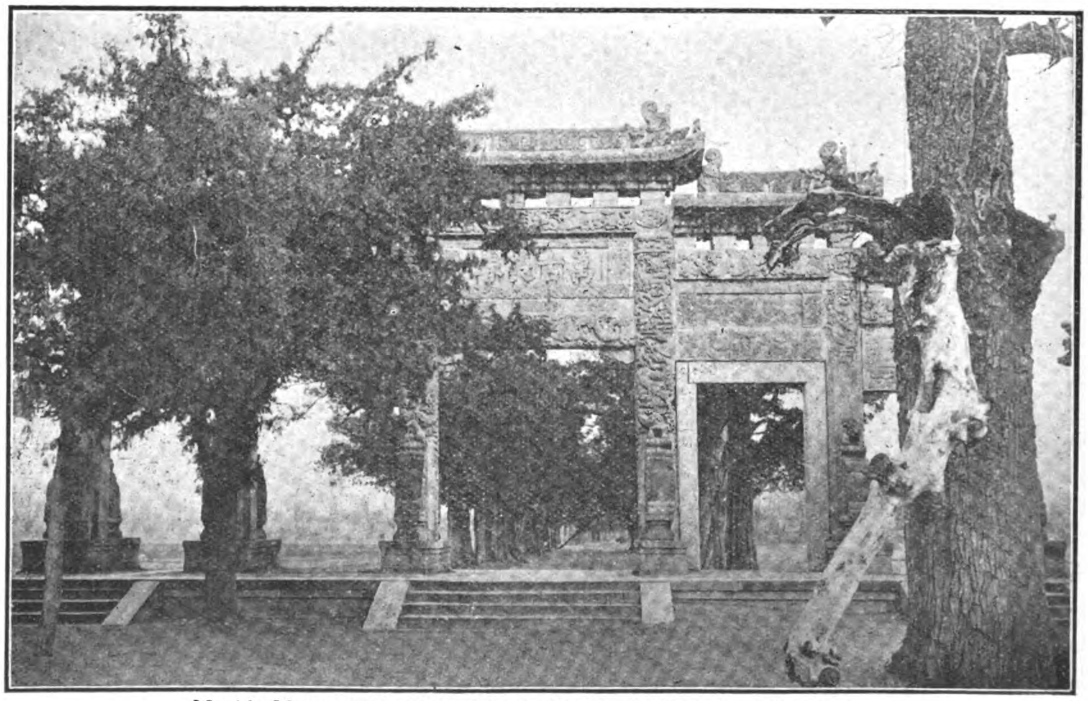
Tsingtau to Shanghai is one Mexican dollar per 100 Kilogramme. No shipment has yet been made to Europe from that Port, but from Tientsin, Shantung cotton, especially Lintsing product, has been exported in large quantities to Great Britain and Germany lately.

Tientsin merchants buy cotton much cheaper than foreign buyers at Tsinan. This is because the former have larger capital, greater experience and are more painstaking in the method of buying than Tsinan merchants. For instance, they despatch their agents to the country during the summer, and after looking at the plants, contract for the purchase, paying down certain sums of money as deposit to cotton growers. Although this method is attended to with more or less risks, purchase can be made very much cheaper than those who will buy through the hands of commission merchants and wholesale dealers after the crop is reaped.

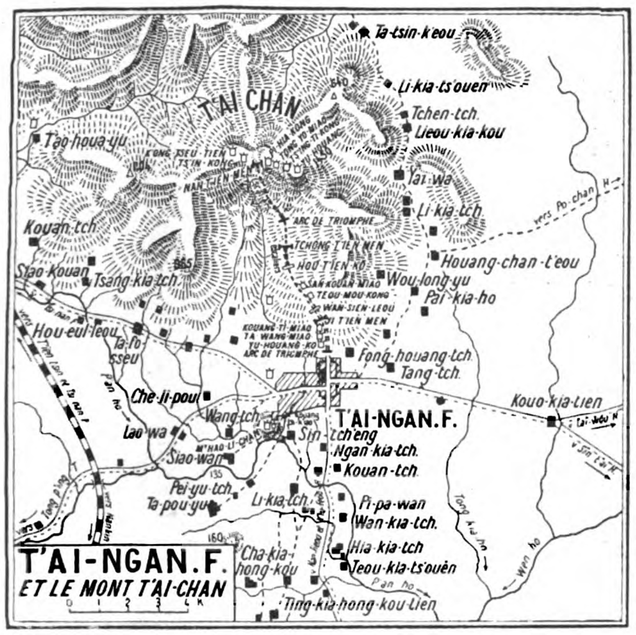
At various cotton producing districts in Shantung, cotton gin machines of Japanese make are generally used. These cost only about $40 apiece, but they are not only very easily damaged. They do not, however, completely take away the seed. The Industrial Bureau of Tsinan is manufacturing ginning machinery in imitation of the Japanese machine, and supplying it extensively to cotton growers in the interior. On the other hand a German-made machine costs only 3-400 marks, but its efficiency and the amount of work it accomplishes are far above the Japanese machines.

GOVERNMENT ENCOURAGEMENT

Mr. Fan Fu, Commissioner of Industry, Shantung, has been working hard for the improvement and development of the industry in the province. As soon as he took up the post, he published his policy for the industrial administration to



Marble Memorial Arch in Avenue leading to Temple of Confucius.

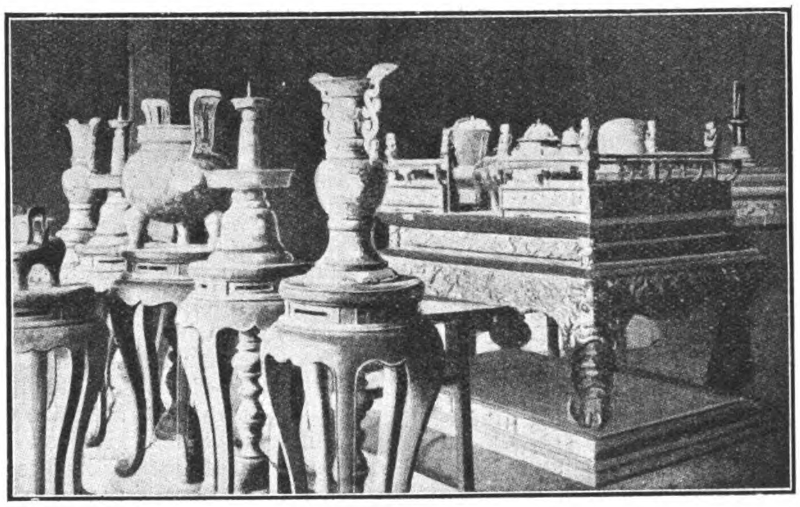


Plan of Taianfu and Tai Shan.

Tai Shan Mountain.

be carried out in Shantung. Later, he established an organ called the "Shantung Industrial Magazine" and started to interest the public in the subject. His earnest efforts have borne fruits, for recently the enthusiasm of the people has been stirred up, with the result that a number of industrial schemes are being contemplated.

One of these is the establishment of a spinning mill at Kaotang, a place famous for cotton production. A company has been organized there by a certain Chen Wen-chang for the purpose of manufacturing cotton yarn with the local production. It is said that the first payment on the subscription of shares has been made. The capital is understood to be of a small amount, however.



The altar for offerings in honour of Confucius, as it now stands in the house of his 76th lineal descendant.

Another project is re-starting the work of the Tungchang Spinning Mill. It must be remembered that this factory was established some years ago, but owing to mismanagement was reduced to the state of suspension. An order has now been issued by the authorities commanding the shareholders to resume the work. The matter being considered by the parties interested in the enterprise, something will be done toward the recommencing of operations.

Altar in the Temple of Confucius at Chufu.

TOURIST FACILITIES IN SHANTUNG

Foreigners desirous of visiting this section of China will be interested to learn that there are in Shantung Province two distinctive points of Sacred Mountain Tai Shan. This is the sacred mountain of China. It was China's sacred mountain before Confucius was born. Tai Shan lies about 60 miles north of Confucius's grave and about 40 miles south of Tsinanfu, the capital city. At the base of the mountain is the city of Tai-an on the Tientsin-Pukow Railway. During February, March,

April, and May hundreds of thousands of pilgrims from all parts of China come to Tai Shan to ascend the mountain and seal vows made on the sick bed or under extenuating circumstances. The mountain is about 4,500 feet above the floor of the valley. Granite steps 7,500 in number leadfrom the base to the summit. Thousands of bound-footed women totter up these steps during the pilgrim seasons to worship in the temples at the summit. The temples lining the route of ascent and gracing the summit are extremely interesting from historical and artistic points of view. Chair bearers carry those to the summit who can pay the price, which is $2for the round trip. It requires 4 hours to make the ascent in a chair and 2½ hours to come down.

There are at present no hotels or inns of foreign style at either Taianfu or Yenchowfu, but the Government is contemplating making accommodations at these places for foreign visitors.

Tsinanfu, the capital of Shantung, lies at the juncture of the Tsingtau-Tsinanfu railway and the Tientsin-Pukow line. It is a Chinese city of about 250,000 inhabitants and may be considered rather picturesque and interesting. The Chinese have set aside a large area of land west of the walled city for treaty port purposes for foreign business. This area is laid out in wide macadamized roads, lighted with electric lamps, and well policed. Quite a number of foreign firms, mostly German, have constructed palatial business and residence structures in this section and it presents the appearance of a thriving commercial city. There are two small foreign hotels located here with what the ordinary tourist would term very poor accommodations. A company is being organized to construct a modern foreign hotel, but it will probably be some time before Tsinanfu is provided with good hotel accommodations, although the business of the place would make it seem an inviting project.

Foreigners desiring to see some of the more interesting historical spots in China, places which combine historical interest and scenic beauty, would do well to try to arrange to visit Confucius's grave and the Sacred Mountain Tai Shan.

MANUFACTURE OF STRAW HATS IN TSINGTAU

The manufacture of straw hats for sale to Chinese and to foreigners has been under investigation by the straw-braid exporters of Tsingtau for several years. The possibilities for the success of such an enterprise were enormously increased by queue cutting among the Chinese, which seemed popular during and following the revolution in 1911-12. It is evident now to a traveler in North China that this radical change of custom has reached only a very small percentage of the population.

While there is a market among foreigners and those Chinese who have come in contact with foreigners in the treaty ports, it is assumed that in establishing a factory for the manufacture of straw hats greater dependence would be placed on the sale of a very cheap hat. Some protection for the head is necessary to the majority of the population, whose work keeps them outside under a powerful sun for long hours. Should queue cutting become prevalent, the market is promising.

First among the Tsingtau exporters to show his faith in the possibilities of the trade was an English straw-braid exporter, who started on a very small scale. Special attention was given to the manufacture of a large, soft hat costing about 4 cents gold to make, and retailing at 10 to 12 cents. Better grades retailing at 20 and 50 cents also find sale. Eight cheap Japanese machines are used in this factory, costing about $12 each. The braid used is that rejected by the English exporter.

EFFORTS OF SINGER SEWING MACHINE CO. AND GERMAN GOVERNMENT.

The establishment of a separate agency for the Province of Shantung by the Singer Sewing Machine Co. (with headquarters in Tsingtau) has brought to the field a foreigner who, by reason of his interest in the sale of hat-making machines, has stimulated interest in the industry. He has sold two machines to a German firm in Tsingtau which wished to experiment, and has recently made several sales to a mission school in the interior where straw-braid and straw-hat making is taught. The output from this school is entirely the cheap grade of hat.

The German Government has long been interested in the establishment of the straw-braid industry in the territory of Kiaochow. Its efforts have not been entirely successful; but a school has been established, and in connection with this it has recently been proposed to open a straw-hat factory under foreign management and using Chinese capital. The Singer sewing machine agent is desirous of furnishing the machines for this factory, and is exhibiting, in connection with an exhibit of the work of the straw-braid school, several hat machines in operation. This proposition, if carried out, will be the first attempt to take up the business on a large scale in Tsingtau.

The competition of hats made in Japan from Chinese braid will be most keenly felt. These hats, retailing at 20 cents gold, are considered better by the coolie than the cheaper hats made here.

TSINGTAU SOAP FACTORY

A German Chemist recently erected a soap-manufacturing plant in Tsingtau, which appears to be having considerable success. The idea is to manufacture toilet and washing soaps to be supplied to the natives at lower prices than the imported products.

The factory is run entirely by electricity, and has Chinese employees. It is said that pure fat only is used in the manufacture of the soaps, and the toilet soaps are claimed to be much superior to the imported soaps which can be purchased at anywhere near the same price. The soap is clean, mild, soft, and gives a strong foam in washing, with a delicate perfume, and will stand comparison with much more expensive imported products.

A novelty which has been introduced, is the sale of soft soap in enamel buckets. This is sold in graniteware enamel buckets holding 10 kilos, and sells complete with wooden cover for the bucket at $3.80 Mexican ($1.79 gold), a 5-kilo bucket of soap selling at $2.20 Mexican (1.03 gold). The cost of the bucket and soap together is less than the buckets alone in the regular retail shops of the city. This mode of selling appeals particularly to the Chinese, as they are particularly anxious to secure enamelware goods.

The soap factory sells its violet, lilac, heliotrope, and lily-of-the-valley scented toilet soaps in cartons containing three cakes at $1 Mexican (0.47 gold) per carton at retail. Other toilet soaps are packed four cakes in a carton and are sold at 50 cents Mexican (23 cents gold) per carton. Family toilet soap comes six cakes in a carton and sells for 50 cents Mexican (23 cents gold). Lanolin soap sells for 15 cents Mexican per cake and shaving soap at 20 cents per cake. Washing soaps come 25 cakes or bars to the case, each bar weighing 2 pounds, and sells for $5 Mexican (2.35 gold) per case. Tar soap, packed 25 cakes of 2 pounds to the case, sells at $4.50 Mexican.

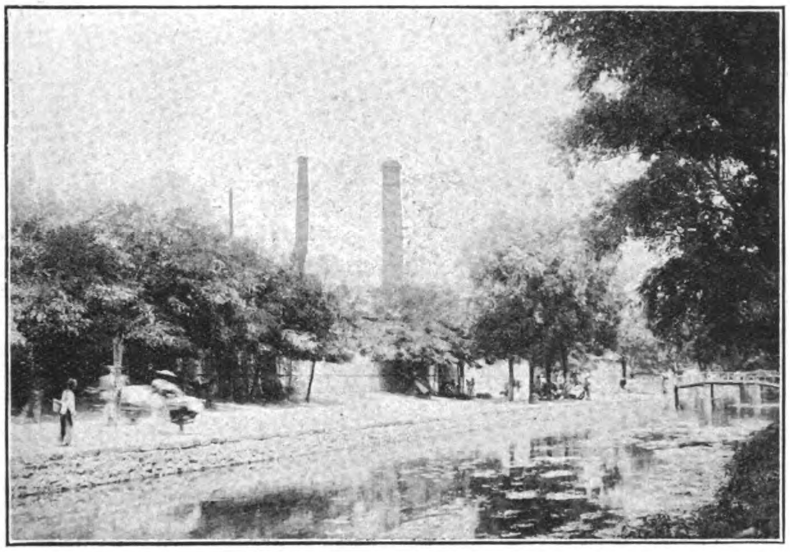
The machinery for this factory was secured from Germany.

DROUGHT IN AMUR VALLEY.

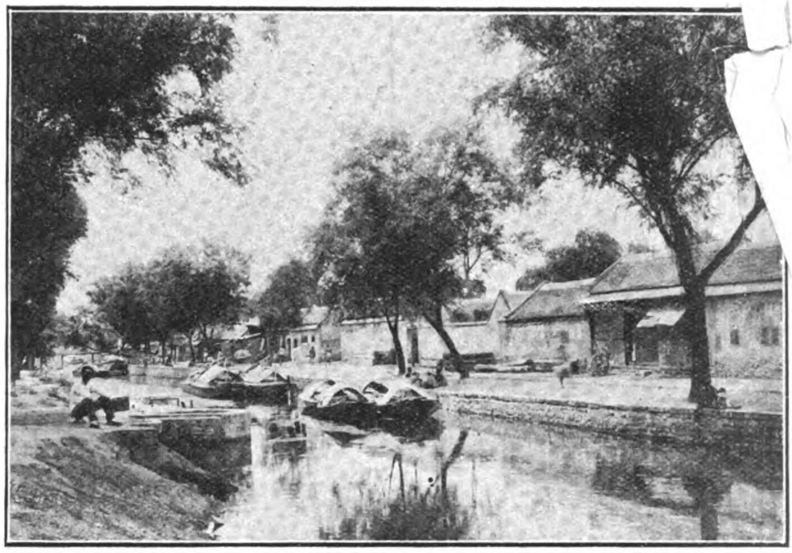
The *Manchuria Daily News* states:—"The long drought has shrunk up both the Sungari and the upper Amur so low as to make it difficult for even a steamboat to navigate. Most of the vessels, numbering about 120, which ply up and down these rivers are forced to lie idle. The losses of the shipowners so far this year have been heavier than all the profits of the recent years put together."

THE TRADE OF TSINANFU

(Consul General Julian H. Arnold)



VIEWS OF TSINANFU: The Tungliushui.



The Tungliushui, (the Long East River), from the West Gate.

Tsinanfu, the capital of Shantung Province, at the junction of the Shantung and the Tientsin-Pukow Railways, is next to Tientsin as a commercial center in North China. Shantung Province claims a population of 30,000,000, with an area one-third that of the State of California.

Tsinanfu has been growing rapidly since the completion of the German railway to Tsingtau, the best equipped harbor in North China. Ocean-going vessels can go alongside piers at Tsingtau for cargoes of peanuts, straw braid, hides, goatskins, tallow, bean and peanut oils, beef, live stock, coal, hemp, and eggs. These commodities are mostly collected at Tsinanfu, 250 miles by rail from Tsingtau, for shipment to Europe, America, and Japan, in exchange for piece goods, kerosene, lumber, railway materials, metals, machinery, matches, sugar, dyes, needles, soap, and canned goods from abroad transported by rail from Tsingtau to Tsinanfu for distribution over the Province. Tsinanfu is also connected by rail with Tientsin, 217 miles to the north, and with Pukow, on the Yangtze River, 400 miles to the south, an enormous trade being developed between Tsinanfu and these ports. Sometimes freight stacked in huge piles along the Tientsin-Pukow Railroad is waiting for days for cars for transportation to Tsinanfu.

A RAPIDLY GROWING CITY.

Tsinanfu has grown from a city of 80,000 inhabitants 10 years ago to a city of 300,000 to-day, and this number will probably be doubled within the next 10 years, for railways are about to be constructed connecting the Tientsin-Pukow Railway with the Peking-Hankow and the Taiyuanfu lines, thus placing Tsinanfu at the junction of railways running in all directions over North China.

Tsinanfu is at present the distributing center for a region embracing tens of millions of people. One may travel all over China and find few Chinese cities more busy and bustling in appearance than is the capital of Shantung. Thousands of native wheelbarrows, cargo carts, and jinrikishas form an unbroken line of traffic from the wide, well-paved streets of the foreign settlement into the gates of the picturesque, ancient walled city and over its narrow thoroughfares, only sufficiently wide to permit the passing of two wheelbarrows, and paved with granite slabs, badly worn by the never-ending procession of heavily laden wheelbarrows and cargo carts threading in and out, on close margins, in the general mix-up characteristic of street traffic in populous Chinese cities.

From the luxurious and spacious granite, red-tiled station, with its gorgeous stained-glass windows and beautifully tiled floors, of the Tientsin-Pukow Railway in the foreign settlement to the humble, low, poorly constructed mud or brick structures, with paper windows and earthen floors, the stores of hundreds of shopkeepers in the native city, goods, apparently from all corners of the earth, flow in almost constant stream on squeaking wheelbarrows and horseless cargo carts.

Likewise, enormous quantities of native produce and wares are being conveyed to the railway stations for shipment abroad produce and wares which in many instances find their way Tsinanfu from scores of country villages over badly kept roads, on mule carts, wheelbarrows, pack animals, and in some cases on the backs of human beings.

IMPORTS OF THE CITY.

As Tsinanfu is not a seaport, there are no customs returns of trade giving the statistics of imports from foreign countries and exports abroad. Imports and exports come and go through Tientsin, Tsingtau, Pukow, and over the Grand Canal to and from Tsinanfu.

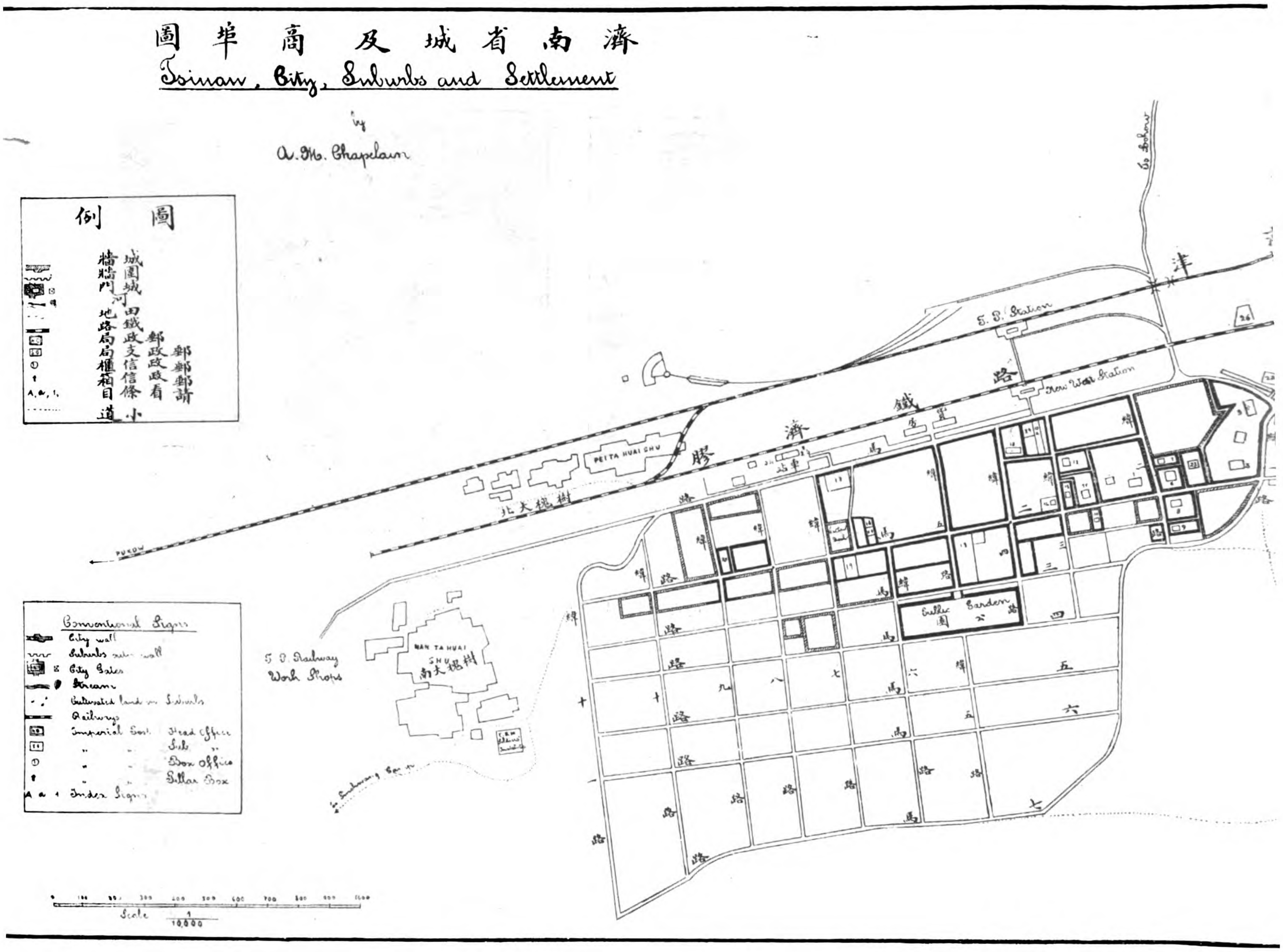
It is impossible to give figures showing the quantities and values of Tsinanfu's foreign trade. A glance through the customs returns for the port of Tsingtau will furnish one a guide as to the character of goods being imported into and exported from Tsinanfu, for the bulk of Tsingtau's trade passes through Tsinanfu, although, since the completion of the Tientsin-Pukow Railway, increasingly larger quantities of goods are being shipped each year from Tientsin to Tsingtau for transhipment there to foreign ports.

The largest item in foreign imports for Tsinanfu is piece goods. Gray shirtings, English jeans, plain cotton chintzes, cotton italians, Japanese cotton yarns are among the main items in the importations of foreign piece goods. Between 5,000,000 and 10,000,000 gallons of American, and probably less than half of this amount of Dutch and Russian, kerosene are distributed annually along the Shantung Railway, most of it going to Tsinanfu for redistribution there.

Although Shantung raises considerable wheat and produces large quantities of native flour, yet the Shanghai and American mills ship large quantities of their products to this market.

SPECIAL ARTICLES OF TRAFFIC.

Tsinanfu is a splendid market for aniline and synthetic indigo dyes. A German manufacturer of indigo dyes recently sent a young man to Tsinanfu to learn Chinese and there represent this firm in its efforts to extend its business in Shantung Province.



Plan of Tsinanfu: (from "Shantung")

Huge quantities of Japanese matches are shipped to Tsinanfu distribution among the trade in this section of China. During year 1913, 7,000,000 gross of Japanese matches entered the t of Tsingtau, mostly for transhipment to Tsinanfu.

Building operations along the Shantung and the Tientsin-‹ow Railways require the use of considerable quantities of ıber and other materials. The people of Shantung, as in most :kly populated portions of China, have cut the timber from ir hill lands, so that Shantung produces no lumber and is ged to import that which is needed from northern Manchuria Chosen (Korea) and from the United States. Oregon pine eing imported into this section of the country in considerable ntities.

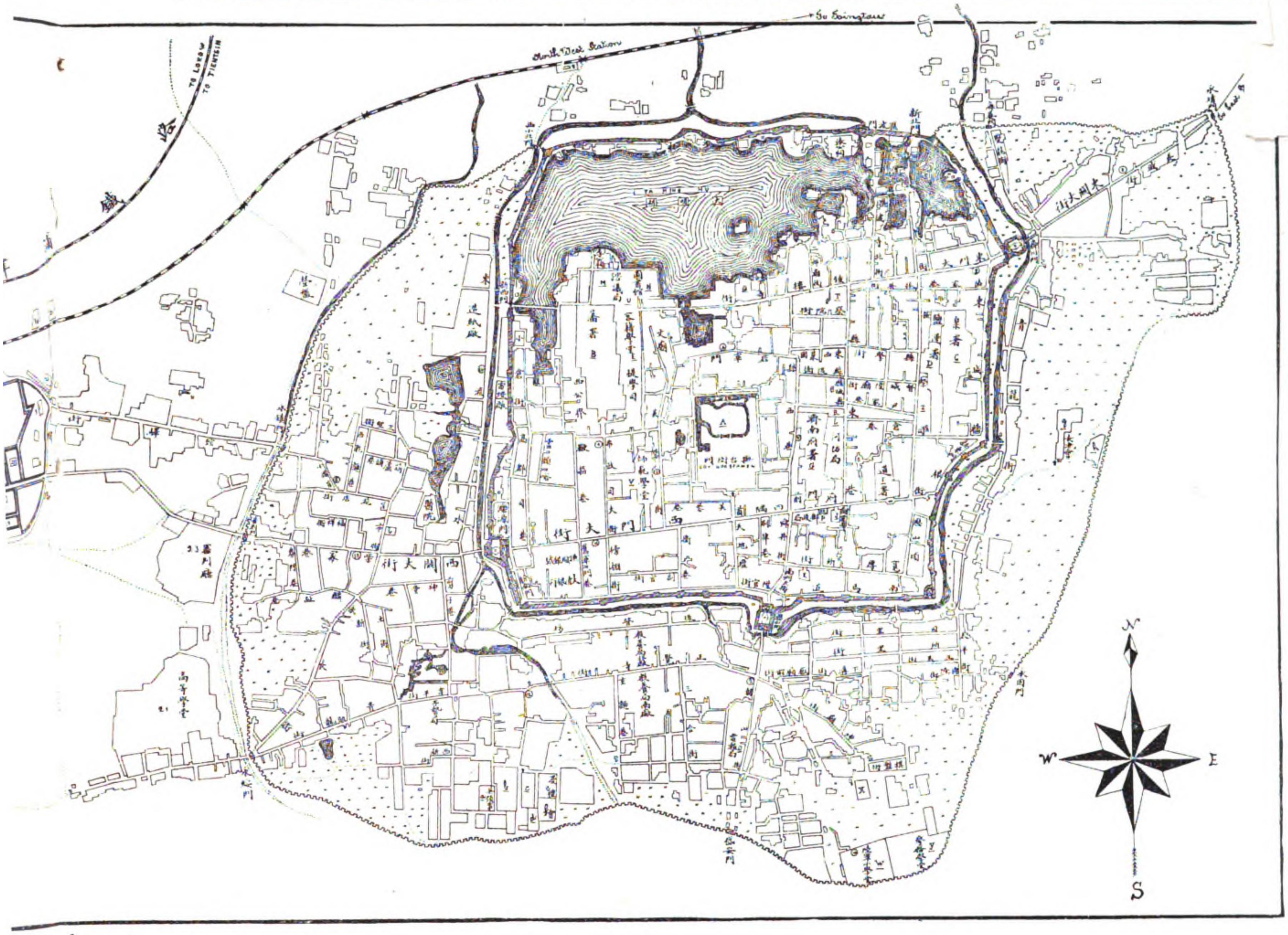
China offers a good market for foreign soaps for laundry poses. Tsinanfu shops carry large stocks of English, anese, German, and other foreign manufactured soaps.

Sewing machines and needles are being used in larger ntities each year. The Singer agent for Shantung informs that his company now sells 2,000 sewing machines a year, :reas their sales in this Province 10 years ago netted only 100 ear. The company maintains sewing schools, with tuition :, and advertises extensively in Chinese throughout the cities towns of the Province, and so gets business by going :r it.

TOBACCO—RAILWAYS AND PORT IMPROVEMENTS.

The British-American Tobacco Co., also a very enterprising concern, through its admirable organization in the field, sells monthly 500 cases of 50,000 cigarettes each in Tsinanfu. A year or two ago the company sold 700 cases per month, but competition from Japanese and Chinese manufactured cigarettes has driven the sales down to 200 less per month for the present year.

Railway materials, mining tools, electrical machinery, etc., figure to a considerable extent in the imports for Tsingtau for transhipment to points along the railway, but as the railway from Tsingtau to Tsinanfu is a German line and that from Tientsin to the southern boundary of Shantung is German constructed, and as the coal mines along the Shantung Railroad are owned and operated by Germans, it is only natural to find that these materials are for the greater part of German manufacture. It is estimated that Germany has spent upward of G. $100,000,000 in improvements at its port, Tsingtau, and in connection with its railway connecting the splendid harbor facilities at Tsingtau with Tsinanfu, 250 miles in the interior of Shantung. These improvements were undoubtedly made with the object of furthering German commercial interests in North China, so that one need not be surprised to note the overwhelming predominance of German trade and influence along the line



of this railway. In fact, the bulk of both the foreign import and export trade of Tsinanfu is done through German firms with establishments there.

EXPORTS OF THE PROVINCE—THE AMERICAN PEANUT.

Tsinanfu is one of the important centers in North China for the collection of native produce for shipment to Pukow or Tsingtau for transhipment to foreign ports.

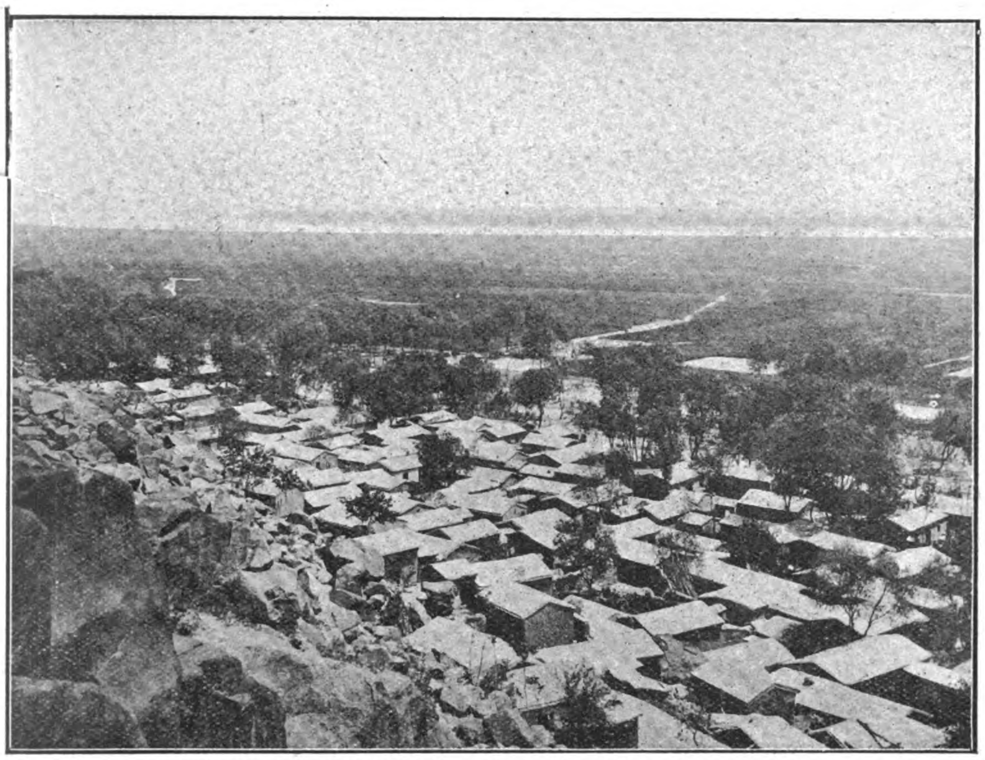
Twenty years ago an American missionary resident in Shantung brought to his mission station, when returning from his furlough in the United States, a quart of California peanuts, which he gave to a native convert as seed to replace the poor shriveled native peanut which possessed little or no marketing qualification. To-day this quart of peanuts has spread all over Shantung Province, resulting in giving to these people an export trade in this article of 150,000 tons a year.

During 1912 there were exported to foreign countries 60,000 tons of shelled peanuts. It is estimated that an equally large quantity went to Pukow or to Chinkiang over the Grand Canal from Tsinanfu and southern Shantung, also for shipment abroad. About 30,000 tons of peanuts in the shell are exported from Shantung to foreign countries, mostly for confectionery and sale as roasted peanuts. The shelled peanuts are shipped mostly to Europe, the larger quantity going to Marseilles, for use in manufacturing toilet soaps. The American market is taking increasingly larger quantities of Shantung peanuts, both shelled and unshelled, each year. The manufacture of peanut butter and the use of peanut oil in high-grade butterine in the United States seem to be making the demand larger each year.[1] The peanut is a fall crop, and shipments are made from November to June of each year. The price of shelled peanuts ranges from $2.30 to $3 U. S. gold per hundredweight (English hundred-

[1] NOTE.—The importation of peanuts into the United States was not of sufficient importance to be separately classified in statistics prior to 1910. In that fiscal year the total was 29,276,235 pounds, valued at $1,234,088. There was a decline the next year to 18,834,441 pounds, worth $765,033. In the fiscal year 1912 the imports of peanuts totaled 15,558,038 pounds, valued at $575,282, advancing in 1913 to 19,082,995 pounds, worth $782,787. In the fiscal year 1914 (twelve months ended June 30) the imports of peanuts reached the large total of 44,549,789 pounds, valued at $1,899,237. The unshelled peanuts have a foreign invoice value of about $3\frac{7}{8}$ cents and the shelled about $5\frac{1}{2}$ cents per pound.

American imports of peanut oil were shown separately in statistics first in 1912, when the total was 895,587 gallons, worth $582,740. In the next year the imports were 1,195,683 gallons, worth $820,763. In the fiscal year 1914 the total imports went up to 1,337,136 gallons, valued at $918,614. The foreign invoice value is nearly 70 cents per gallon.

While the importation of peanuts and peanut oil is considerable, it forms a comparatively small part of the consumption of these products in the United States. Probably 50,000,000 bushels of peanuts are now produced annually on American farms.



VIEW FROM TSINANFU: The Yellow River, in the Distance.

weight=112 pounds) at Tsinanfu. It costs about $0.12 per hundredweight to ship them from Tsinanfu to Tsingtau or Tientsin. Selected unshelled peanuts sell for from $2 to $2.40 per hundredweight at Tsinanfu. They are shipped in large gunny bags.

Peanut oil is also an article of export from this Province to the extent of about 20,000 tons annually. The bulk of the peanuts in this Province are produced in the central and southern sections. Three tons to the acre is considered a very good yield, but the average yield is a little more than two tons. One seldom finds one family raising as much as an acre of peanuts. As there are nearly 600 persons to the square mile in Shantung the farms are necessarily small. The farmer gets about 1 cent (gold) a pound for his unshelled peanuts at harvest time. The price advances to about 1½ cents a pound within six months, as the ordinary farmer has no storage facilities or methods of financing his crops; moreover, there is a certain shrinkage in weight and measure over this period of time.

Shantung Province also exports a good quantity of walnuts each year, probably about 1,500 tons. These are not cultivated as foreigners understand the term. They are shipped to Austria, Holland, Germany, and the United States.

STRAW BRAID AND STRAW HATS.

While in the leased German territory of Kiaochow straw braid is not produced to any appreciable extent, the great bulk of China's trade in that line filters through Tsingtau from the hinterland and is shipped from this port.

The whole industry from the cultivation of the straw to the packing for shipment, including the sorting, bleaching, and plaiting is done by Chinese men, women, and children. The trade in straw braid with the United States is increasing rapidly, the better qualities going to that market.

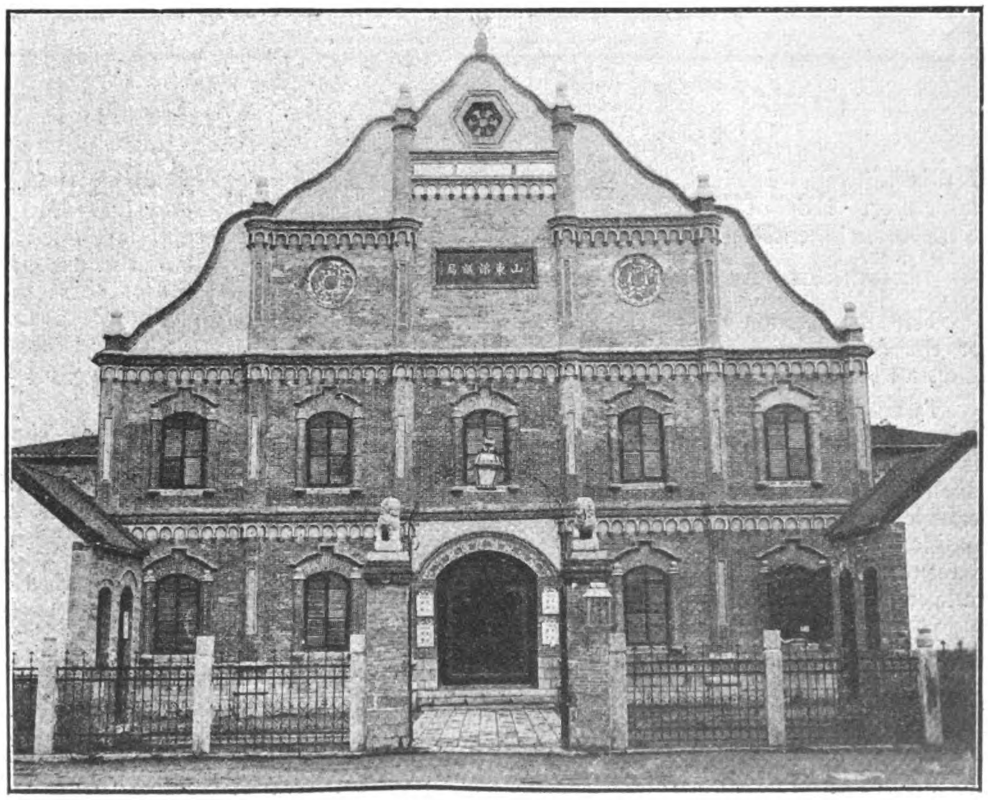
Tsingtau is the recognized great straw-braid center of China, and the leading exporting firms of the Far East have large branch houses with expert straw-braid men in charge of that department.

The straw is grown by the farmers in Shantung, and the industry is of great importance. The straw braid is made by peasants of both sexes and all ages and is exclusively a household industry. The better quality as shipped to the United States is plaited by girls of experience and ability, while the ordinary qualities are made by the aged and very young. During the summer months, while the men are employed in the fields in the cultivation of the straw, the family are employed in plaiting, to meet the orders with which they are well supplied. Where persons are employed to help out families, the wage varies from 10 to 40 cents Mexican ($0.045 to $0.166 United States currency) per day, those earning the latter wage being considered experts and employed on the highest grades.

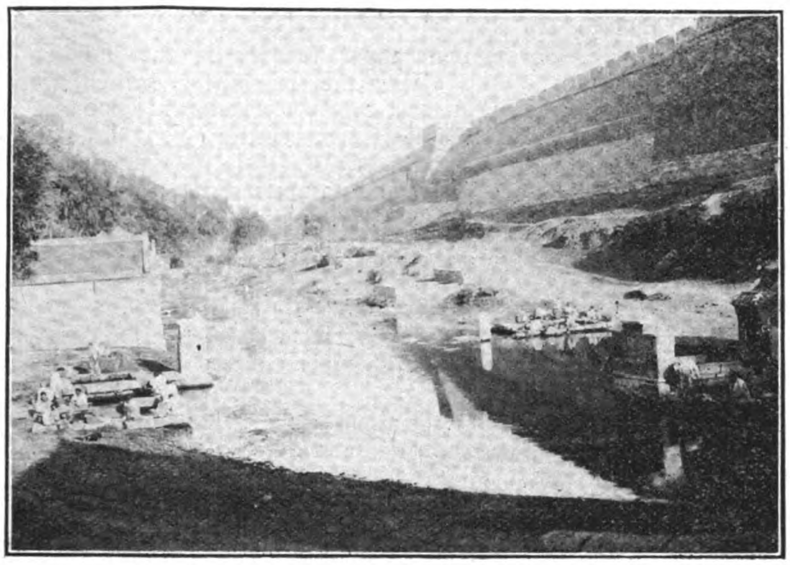
Where the straw is not grown by the farmer and his family employed in plaiting, the raw material is furnished by the dealers at a contract price with the head of the family, who, should the occasion demand, calls in the required help to fill the orders.

The system of doing business in the straw-braid industry commences with numerous small dealers, who travel throughout the interior buying up small parcels of the various qualities of braid and carrying them to certain local markets to be sold to the larger so-called manufacturers. These pieces are matched, joined together, bleached, and bundled, and shipped to their agents in Tsingtau to sell to the foreign exporters on a commission basis. These Chinese dealers are good traders, and they hold out for their price, which has of late been rising.

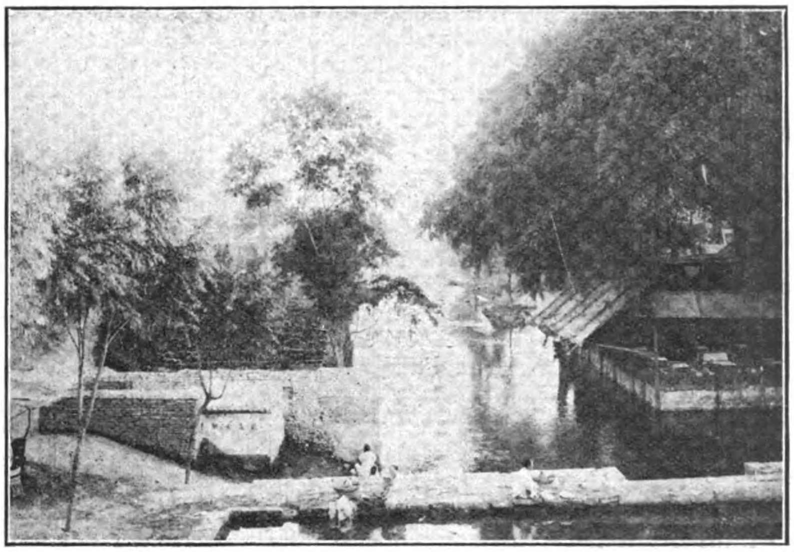
About 6,000 tons of straw braid go from Shantung each year to foreign countries for manufacture into straw hats. The straw braid is made of wheat straw, hence can only be produced in those sections of China growing wheat, which means the north, or rather that section north of the Yangtze River. Even in the wheat-growing sections there are only certain districts which produce straw braid. For instance, in Shantung Province, although wheat is raised in most districts, the production of straw braid is confined to one or two sections.



The Provincial Assembly at Tsinanfu.



VIEWS OF TSINANFU: The Walls.



The River at the East Gate, alongside City Wall.

The best braid is produced in the Shaho district north of Weihsien, on the Shantung Railway. The visitor to the Shaho district at any time, except when the wheat is being harvested, would find the entire population engaged in stripping, cutting, or plaiting straw for straw braid. Only that part of the straw above a foot from the root and below about a foot from the head can be used for braid. Pieces 5 and 6 inches in length are thus secured, cut lengthwise into a number of strips, and then dampened and plaited. The better qualities are used for first-grade braid. The women and children can make 1 or 1½ cents (gold) a day at this work, which means much toward augmenting the earnings of the small farm.

Brokers buy the plaited braid for shipment to Tsingtau for the foreign exporters. Labor is so cheap in China that it will probably not be many years before the bleaching, now done in England and Germany, will be undertaken in China, and the straw hats manufactured here at a fraction of the present foreign cost. A straw-hat factory at Tsingtau now makes a cheap-grade hat for Chinese use.

HIDES, CATTLE, AND BEEF.

Upward of 200,000 cowhides are exported annually from Shantung, the trade centering at Tsinanfu, and shipments being fairly equal to Tsingtau, to Pukow, and over the canal for transshipment abroad.

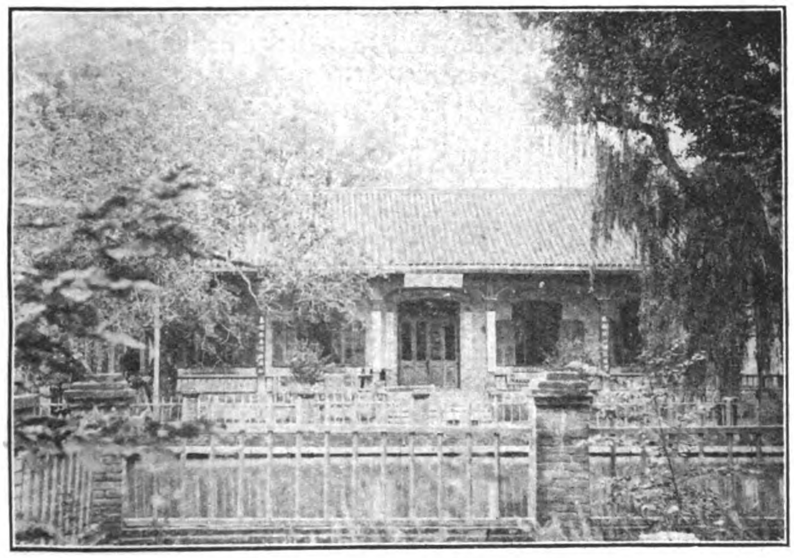
Goat, pony, donkey, mule, dog, weasel, rabbit, and cat skins are also exported from the Province in considerable quantities. These skins are prepared for shipment in Tsingtau, where a large German firm maintains a power press which is rented for pressing hides into bales for shipping.

About 2,000 tons of Shantung tallow were exported during 1913 from Tsingtau. A great part of this was prepared at Tsinanfu, and a considerable quantity was also shipped from Tsinanfu via Pukow.

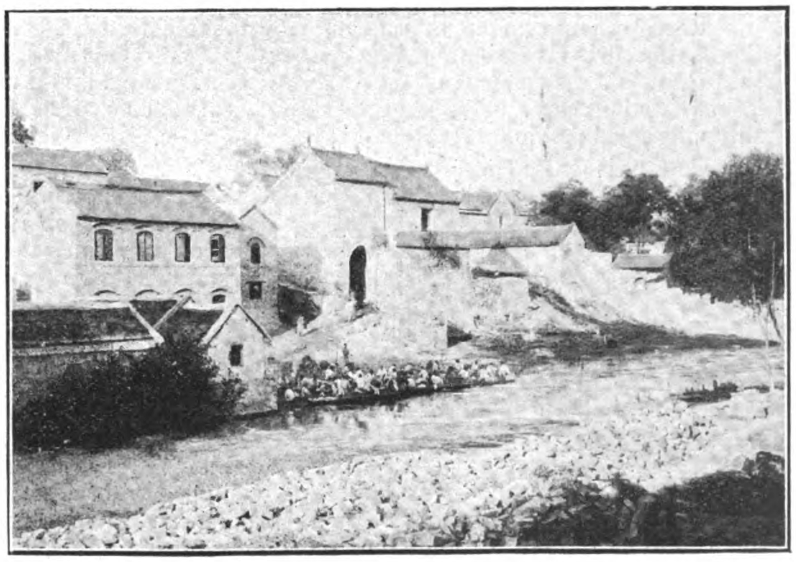
The Russian Army in the East receives a large portion of its supply of beef from Shantung. Dressed beef and cattle on the hoof are shipped from Shantung via Tsingtau to Vladivostok. Owing to the presence of a considerable population of Mohammedans in Shantung and the Provinces west, large quantities of beef are raised and consumed here. Chinese, other than Mohammedans, eat no beef, considering the cow a farm animal; neither do they breed milch cows, hence there are no dairy interests in China. There were exported from Shantung in 1913, 93,000 quarters of beef, considerable of which went to Vladivostok and Shanghai. The cattle weigh 800 to 900 pounds and sell for about $25 (gold) a head at Tsinanfu. Transportation to Tsingtau is at the rate of $20 gold per carload of 15 head. The quality of beef is good. It would be to the advantage of the Army authorities in the Philippine Islands to consider the possibility of Shantung beef for the Army in the islands. The German authorities maintain in Tsingtau a municipal slaughterhouse under Government inspection where cattle may be slaughtered at fees fixed by the authorities.

THE EXPANDING EGG AND POULTRY BUSINESS.

During recent years, since the completion of adequate transportation facilities for central Shantung, large quantities of eggs, fresh and in powdered form, have been shipped abroad. This trade has been made possible by the running of refrigerator



VIEWS OF TSINANFU: Chan Shui Chuen: Pearl Spring in Yamen.



Hai Hu Chuen: The Spring with the Best Water in All Shantung.

ships to England, and it is understood efforts are being made to run refrigerator ships across the Pacific to carry Shantung eggs and beef to America. The International Cold Storage Co. of Great Britain, has been buying fresh eggs in Shantung for shipment to England at 360 eggs for $1 U. S. currency. Fifteen years ago one could buy 900 eggs for this sum. But 360 for $1 is considered the lowest price at which eggs can now be secured.

The Shantung eggs weigh 10 to 1 pound and seem to be rather dark in color. It is estimated that upward of a million eggs a day are shipped from Shantung during the season; that is, during the spring, early summer, and fall. For shipping purposes they are packed in boxes, 500 to the box, with straw filling. They are shipped in carload lots, 580 boxes to the carload, and repacked at Pukow or Tsingtau for transportation abroad.

A factory at Tsingtau also buys eggs for separating the whites from the yolks for making albumen and dried yolks for shipment to Germany.

Considerable poultry is also shipped from Shantung for transportation to England under cold storage. The Shantung chicken is small and poorly fed; dressed, it weighs on the average 1½ pounds, and sells for 10 cents U. S. currency in the southern part of the Province. Goodly numbers of eggs or chickens can not be secured from any one producer, as there are no such things as poultry farms in China, each farmer or household raising a few chickens and eggs for market purposes, the aggregate making a huge sum total, as the number of farms and households is very large. Purchases of these products, as well as of other farm products, are generally made in the market towns on market days, when people from the surrounding country take their produce to the market and hold it there for general sale.

MULES AND DONKEYS.

Mules, comparing favorably with a good-grade American mule, can be bought in lots of 20 or 30 at a time for $120 to $150 U. S. currency each. They will measure about 14 or 15 hands and weigh 1,200 to 1,400 pounds. A smaller type can be purchased at lower prices and is adaptable for mountain work. Southern Shantung also produces a large number of donkeys, which are offered for sale at the donkey markets. They sell for about $10 U. S. currency.

The German and British Army authorities have been buying mules in Shantung. It would probably be to the advantage of the Army in the Philippine Islands to investigate the advantages of securing mules from Shantung.

VARIOUS CROPS—JELLY FROM PERSIMMONS.

Sesamum seed, kaoliang (sorghum), Indian corn, China dates, sweet potatoes, etc., are raised in large quantities and the prices are such as to permit of exportation. Sweet potatoes may be said to be the staple crop of China. There is no section which does not raise them and they are a substantial part of the diet of a greater part of the Chinese people.

Recently experiments have been made looking to the use of the China dried persimmon for manufacture into jelly. It is said that the experiments have been successful and that Tsinanfu, the center of a large persimmon-producing area, is shipping dried persimmons abroad for this purpose.

Cotton is raised in western and southern Shantung in considerable quantity. The German Government intended putting in a cotton press at Tsingtau and was to charge 10 cents (gold) a bale for pressing, as against the present price of five times this amount, so as to encourage cotton growing in the Province.

INDUSTRIAL AND MANUFACTURING PLANTS.

The visitor to Tsinanfu for the first time would probably be greatly surprised at finding a city of such size and activity devoid of modern manufacturing plants and factories. An electric-lighting plant furnishes about 4,000 lights in Tsinanfu at 35 cents Mexican (17 cents gold) per kilowatt unit. This concern is Chinese, but was built and equipped with German superintendence and materials. It is making an attempt to enlarge its plant, as it can not supply the demand for lights, but it is experiencing difficulty in expanding.

PAPER FACTORY.

There is a Government paper factory in the buildings formerly occupied by the Mint; the machinery, which was supplied by a German firm, at a contract price of 110,000 taels, is said to have a possible output of 4,000 catties (5,333 lbs.) per working day of 12 hours. The materials used in the manufacture of the paper include rags, wheat and paddy straw, cotton waste, hemp and jute. It is not at present in operation.

In the near vicinity of Tsinanfu is a Government arsenal for the manufacture of powder and cartridges, employing about 1,000 men.

A modern flour mill, with a capacity of 30 barrels a day, is in operation in Tsinanfu under Chinese management, and seems to be doing a profitable business.

A Chinese match factory is about to be erected in Tsinanfu to compete with Japanese manufactured matches.

There are many small Japanese weaving mills in operation throughout the city.

In addition to those already established in this province, a new cotton spinning and cloth weaving factory was opened in 1908 in Chi-mo-hsien, not far from Tsingtau. Gins, looms and other machinery of modern make were purchased abroad. The raw material is drawn exclusively from the province.

The most successful industrial venture under Chinese management and control in Shantung is the Chung Hsing Coal-Mining Plant in Yi Hsien in southern Shantung. This concern is capitalized at about $3,000,000 U. S. currency, and claims to be taking out 1,000 tons of good-quality coal a day. Recently the manager purchased 200 freight cars for marketing his coal. In this connection he bought two Baldwin locomotives. His mines are equipped with the most modern machinery, supplied by German manufacturers, and there is operated in addition to the coal mines a plant for manufacturing fire bricks, coke, and tiles. The company is also putting in a cement-manufacturing plant. The mine operates its own electric plant, furnishing light and power throughout its mines. The company employs about 3,000 men, who receive an average wage of 10 cents a day and board, which costs the company about $1 per man per month. Lodgings are also furnished the men, but at small cost to the company.

FOREIGN BUSINESS METHODS IN TSINANFU.

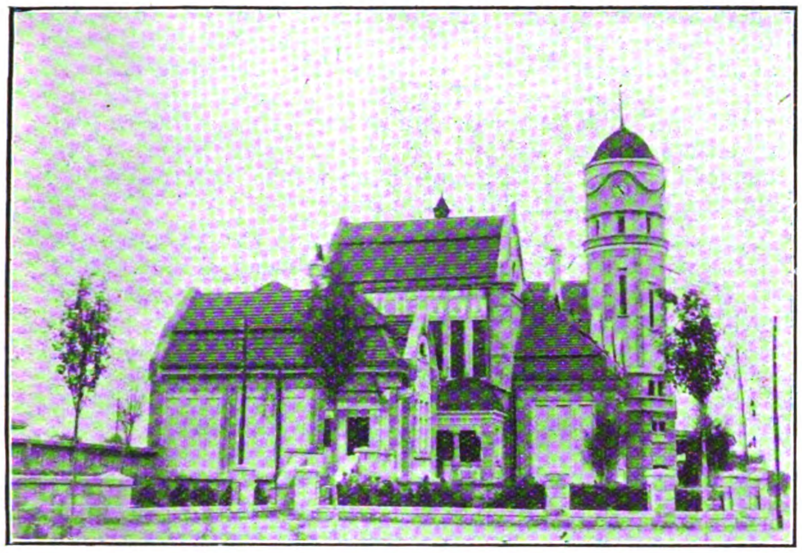
The foreign firms doing business in Tsinanfu depend in a great measure upon their Chinese compradores or go-betweens. The Chinese compradore, through his staff of native buyers or salesmen in the interior cities and towns, collects the native produce or distributes the foreign wares, furnishing credit guaranties for both sides.

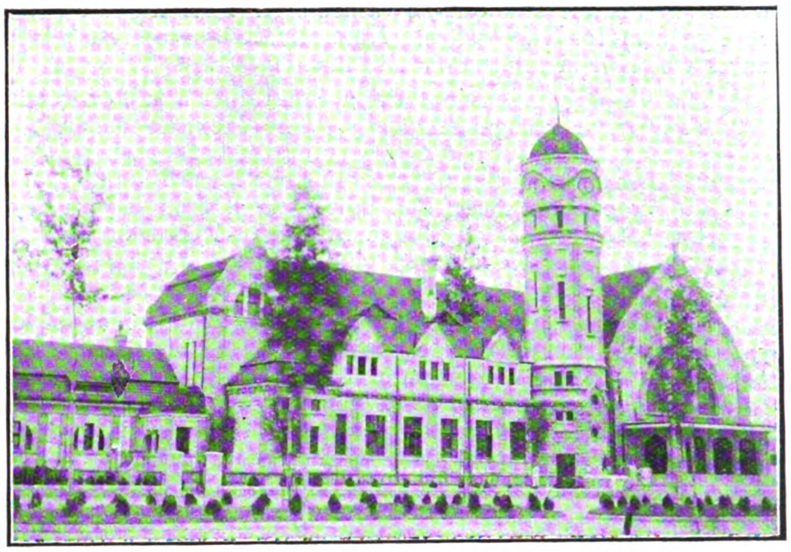
The buyers in the interior are given two and three months credit under the compradore's guaranty. The compradore himself is obliged to give to the foreign firm with whom he is employed security against loss. Generally speaking, the foreign firms seldom lose through lack of ability to recover, unless they have been careless in choice of compradore or in satisfying themselves as to the nature of the security offered.

CURRENCY AND RATES OF EXCHANGE.

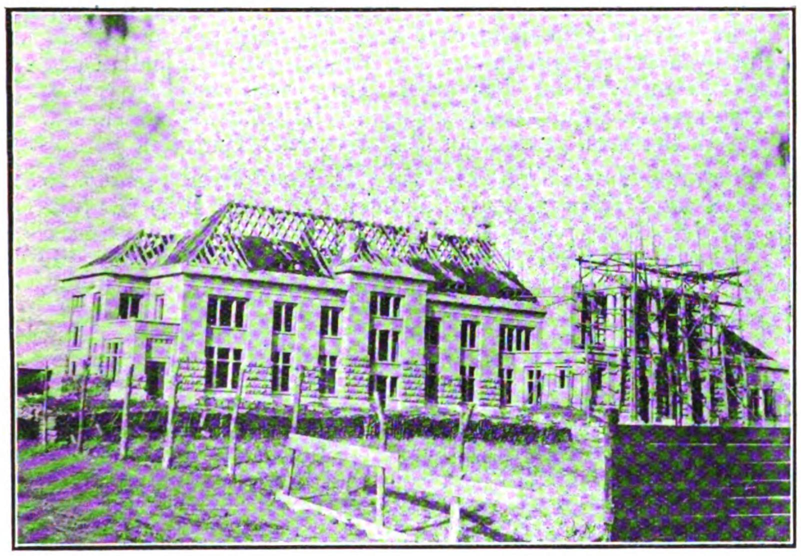
Business in the interior is done in Chinese currency, on the basis of the Tsinanfu or Tsiping tael as a unit. In the vicinity of Tsinanfu accounts are reckoned on the basis of the so-called small tiao, the Tsiping tael exchanging when this article was written at 3,900 tiao and the tiao at 49 copper cents. These rates of exchange vary each day, as also does the dollar Mexican which, on June 1, 1914, exchanged for tiao 2,630.

Business in the Tsiningchow district farther south is done on the basis of the large tiao, which is, generally speaking, reckoned at twice the value of the small tiao, varying, however, from day to day. The foreign merchant of recognized standing among the Chinese can overcome considerable of the inconvenience in the intricacies of exchange from one unit to another by the use of what are known as huipiao, or return credit notes, which will be accepted in payment by Chinese in the interior, provided the firm is well known there.

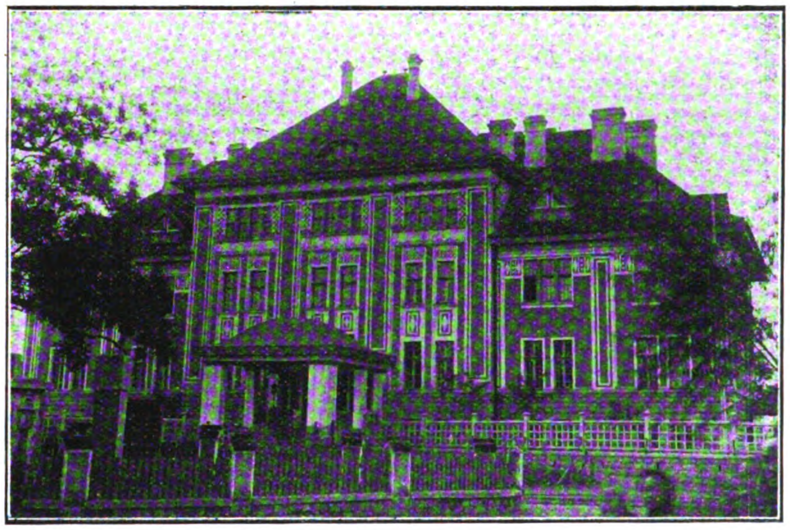




The New Tientsin-Pukow Railway Station.

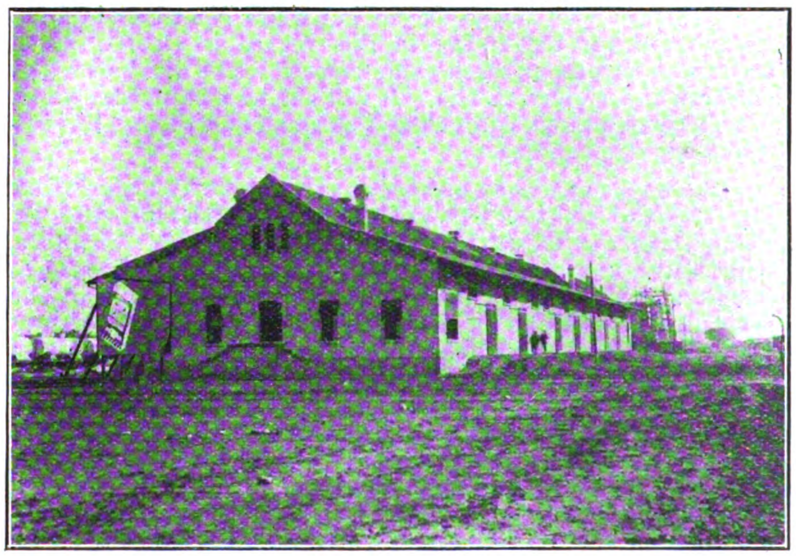


The Shantung Railway Station.



The Tientsin-Pukow Railway Administration Building.

Liu Yuen: A Beautiful Park on the River Banks, Near the City Wall.



The British-American Tobacco Company: Godown and Office.

VIEWS OF TSINANFU.

The return credit notes are to some extent negotiable within a certain district and can be cashed after a certain date at the foreign firm for face value. Naturally certain interest allowances are made in connection with time credits.

The Tsiping tael is not a coin, but rather a unit of weight for silver of a recognized purity. The Mexican dollar, the copper cent, the silver subsidiary coins, the brass cash, and the various bank notes all fluctuate in value one toward another, and in relation to the Tsiping tael unit as well from day to day, requiring an intimate knowledge of the intricacies of Chinese exchange in order to keep up with the changing values. The diao is also an imaginary standard for the copper coins.

The German Government at Tsingtau has coined silver subsidiary coins on the decimal basis, and these are accepted and paid out for their face value in relation to the Mexican dollar, or rather the bank notes of the German bank. These are in use along the railway and to some extent in Tsinanfu, exchanging 10 dimes for 1 dollar, in place of 12 or 12½ to the dollar, as do the Chinese subsidiary coins; the actual rate depends upon exchange for the day and the particular dollar for which exchange is desired.

PROTECTION AGAINST FLUCTUATION.

There is to the firm engaged in foreign export and import business in China one still greater consideration in regard to the question of exchange, and that has to do with the fluctuations in the relative values of the Chinese silver units in their relation to the Western gold standards. For instance, during the past year (1913) the Mexican dollar value in China varied from 45 to 51 U. S. gold cents in relative values. The lower rate naturally favored the Chinese export trade and the higher rate the import trade.

The foreign firms engaged in import and export business must watch very closely the fluctuations in exchange and, while they may not consider it good business policy to gamble on exchange, still they must be in a position to protect themselves against unfavorable fluctuations in order to do a profitable business.

RAILWAYS AND TRANSPORTATION.

As already related, Tsinanfu is fortunately located, being at the junction of two important railways, with assurances of being served by still other lines. The commercial future of any city in China must be considered in its relation to modern means of transportation. Cities commercially important in the past may not, because of the introduction and expansion of railways in China, remain so in the future, and towns now scarcely on the map commercially will, because of favorable railway connections, jump to positions of great importance with the completion of railways giving them serviceable outlets for native produce.

Tsinanfu will always be an important commercial center. Its position for the future in this regard is assured, for it occupies a pivotal position with respect to the development of northern and southern China. It will not be many years before it will be connected with west China and Turkestan through Taiyuanfu and Kaifengfu.

Railways are already planned to connect the Tientsin-Pukow line at some point a few miles north of Tsinanfu with the Peking-Hankow Railway, probably at Chengtingfu, or Shuntefu, with Taiyuanfu in Shansi Province, thus making Tsinanfu an important point in the development of the rich mineral and agricultural resources of north, central, and northwest China, whose populations equal that of our United States.

Likewise, a concession has been granted for the construction of a railway which will connect Kaifengfu, in Honan Province, with Lanchow, the capital of Kansu Province, passing through the rich Wei basin, in Shensi, and destined to tap Turkestan and Mongolia. This railway will cross the Tientsin-Pukow line south of Tsinanfu.

GERMAN CONSTRUCTION—CHEFOO IMPROVEMENTS.

The line from the Tientsin-Pukow Railroad to the Peking-Hankow line is to be constructed by a loan of capital from Germany and by German engineers and with German materials, by virtue of an agreement between China and Germany. The northern section of the Tientsin-Pukow Railroad from the southern borders of Shantung to Tientsin was constructed under a similar arrangement with Germany. The Shantung Railroad connecting Tsinanfu with Tsingtau is a German owned and operated line. The southern end of the Tientsin-Pukow Railroad terminates at Pukow, on the Yangtze River, where accommodations for ocean-going vessels will be constructed, thus making it a direct outlet for foreign trade.

Negotiations are at present being made for the completion of a railway connecting Chefoo, on the Shantung Promontory, with Weihsien, on the Shantung Railroad, and later with Tsinanfu. Breakwater and harbor improvements are planned for Chefoo, which, in connection with the proposed railroad, will make this purely Chinese port an outlet along with Tsingtau for the whole of North and West China, thus again increasing the importance of the position of Tsinanfu as a junction city.

WATERWAY CONNECTIONS—FREIGHT RATES.

Tsinanfu is also reached by a waterway from Chinkiang, on the Yangtze River, through the Grand Canal to its intersection with the Yellow River, which touches within a few miles of Tsinanfu. The Grand Canal and Yellow River route is navigable for flat-bottom boats of small draft only, yet considerable freight finds its way to and out of Tsinanfu over this water route.

The city is also connected with the sea, in the Gulf of Chihli, by a canal with an outlet at Yangchiaokou, a distance of about 140 miles from Tsinanfu. This canal may some day serve an important purpose as a commercial waterway to the sea. At present the canal carries but little cargo for Tsinanfu.

The rates on the Tientsin-Pukow Railroad from Tientsin to Tsinanfu vary from 3 cents Mexican (1½ gold cents) per ton-mile for first-class freight to 0.012 of a cent Mexican (0.006 of a cent gold) per ton-mile for third-class freight. The rates for through freight on the Tsingtau-Tsinanfu line are about the same.

THE FOREIGN COMMERCIAL SETTLEMENT.

Tsinanfu bears the distinction of being the first city in China in which a Foreign Commercial Settlement was voluntarily opened by the Government of China. China took advantage of this fact and drew up a set of regulations, conditional upon which foreign residence may be secured in the Settlement, stipulating among other things, that all lands in this Foreign Settlement must be leased from the Government upon a 30-year term, with option for renewal for an additional 30 years, at a revised rate determined by the general enhanced values of land at that time. The Settlement was opened in January, 1906, and at the time consisted of open fields, the railway station being the only building thereon. There are now 26 foreign-owned (foreign style) buildings and 508 Chinese shops and dwellings. Including the Shantung Railway and mining companies, 11 German and 2 British firms are established here. There are about 200 foreign residents, of whom 118 are Germans, 12 British and 11 Americans. Of the remainder the large majority are Japanese.

Lessees are obliged to build within a year after taking out a lease. All the land in the Settlement is owned by the Government. The Settlement is under the administration of a bureau appointed by the governor of the Province.

Beautiful, wide, well-drained streets, substantially paved and lined with trees and lighted with electricity, make Tsinanfu look like a very modern city. A dozen or more German firms have erected in this Settlement costly business and residential buildings. Owing to the fact that the British Government has as yet not agreed to acquiesce in the acceptance of the regulations governing the residence of foreigners in this Settlement, British firms have not as yet located there. The railway stations of the Tientsin-Pukow and Shantung Railroads are imposing structures, which add much to the beauty of the Settlement. Thousands of Chinese shops, carrying all sorts of foreign and Chinese wares, line the spacious streets of this city, a pleasing contrast to the poorly constructed shops along the narrow streets of the native city of Tsinanfu.

FLOWING SPRINGS—A COLLEGE CENTER

In the southwest suburb of the native city are numerous magnificent clear-water springs gushing from the ground and flowing to a lake in the walled city. Upon the banks of this lake is situated what is probably the most picturesque Chinese Yamen (official residence) in all of China. The waters of these springs also flow into the canal connecting Tsinanfu with the Gulf of Chihli. As the city is the provincial capital, a number of Government schools and colleges are located there, among which is a well-equipped agricultural college.

AMERICAN INTERESTS AT TSINANFU

With the exception of the Singer Sewing Machine Co. and the British-American Tobacco Co., the latter being partially American, there are no American firms located in Tsinanfu. The Standard Oil Co.'s business there is handled through a German agent. However, considerable import and export business is done between Tsinanfu and the United States, but indirectly through German firms.

American residential interests at Tsinanfu are centered in the activity of missionary societies represented there. American missionary hospitals, schools, and colleges are doing an admirable work in and about Tsinanfu. It is a pleasure to find the American and British missionary societies, representing different denominational churches, conducting in Tsinanfu union medical, educational, and religious institutions. Recently the governor laid the corner stone of the Union British-American Missionary Hospital and Medical College, which is to be a beautiful stone building, with accommodations for 150 students and 100 beds for in-patients. The hospital during 1913 treated 31,000 patients. The university of this missionary union, known as the Shantung Christian University, is at present located at Weihsien, on the Shantung Railway. It is soon to be removed to Tsinanfu, where spacious grounds have been secured and where buildings will be erected so soon as the necessary funds have been raised for the purpose. The Young Men's Christian Association, under American direction, is conducting work in Tsinanfu. It hopes soon to be able to erect a building there suitable for its work. There are probably upward of 200 American missionaries engaged in work in Shantung Province. Their labors are appreciated by the people among whom they labor, and this work has done and will continue to do much for American prestige in this Province. The Chinese of Tsinanfu and other parts of the Province are very kindly disposed toward Americans and American interests, due in a large measure to the good labors of missionaries.

OPPORTUNITIES FOR AMERICAN TRADE AT TSINANFU

The only way that American trade interests can be advanced at this important commercial center is by the establishment there of a good substantial American firm with sufficient capital to undertake the business in a large way. As already stated, there are at present a dozen or more German firms established in Tsinanfu engaged in the export and import business. Most of these have not sufficient capital to make their business successful in a large way.

The German firms on the ground will take care of the small business there so that there is no place in Tsinanfu for the little American concern. There is, however, a splendid opportunity for a large American concern, capable of engaging in a general export and import business, having connections in the United States, with a number of large manufacturing and exporting firms. The Chinese Chamber of Commerce of Tsinanfu, during a recent interview, pleaded for the establishment in their city of such an American firm. The whole Chinese public there is distinctly friendly toward Americans, so that an American concern should have no trouble in making proper native connections in this section of China.

In addition to obtaining much of the trade already passing between Tsinanfu and the United States an American firm could secure further markets in the United States for Shantung products and at the same time introduce into the Shantung market American products not already there, as well as extend the sales of those now in the field. The undertaking should be inaugurated by the sending of a good man to Tsinanfu to spend some months in the study of the situation, with the object of ascertaining the nature of the prospective business and the sort of connections which could be effected. The firm should be prepared to do a banking business or at least secure substantial American banking connections in China. It would seem that an organization of a number of American business interests, planned to work in a large way through a number of important commercial centers in China, with establishments at each of the centers, would more nearly accomplish the purpose.

What can be done with American manufactured articles in a country where the people are reputed to have a very low purchasing power is demonstrated by the work of the Singer Sewing Machine Co. in this Province, a district where the masses are said to be poorer than in many sections of China. This company, 10 years ago, with its business in the hands of foreign agents, sold less than 100 machines a year. To-day, with its own organization in the field, its yearly sales number 2,000. This instance illustrates well the difference between a firm's having its own organization in the field and intrusting its products to the hands of agents.

MERCHANDISE WHICH MIGHT FIND A MARKET

American hardware, mining machinery, building materials, industrial machinery, certain farming implements, kerosene and gasoline engines, railway materials, bicycles, laboratory apparatus and supplies, drugs and toilet articles, canned milks and certain tinned provisions, dried fish, piece goods, cotton threads, needles, etc., are among American products which may find a market in China and in Shantung. During the past year Tsinanfu imported about 2,000 jinrikshas with low, nickel-plated, ball-bearing, pneumatic rubber-tired wheels, for use in local traffic. The wheels were imported from abroad. These vehicles are each equipped with two lamps and a bell or horn. A coal-mining company in southern Shantung imported during the past year 200 railway trucks, 2 Baldwin locomotives, and considerable modern mining machinery. A considerable amount of weaving machinery was imported into Tsinanfu during 1913. Industrial plants are likely to spring up in this important trade center so soon as native capital and industry can feel sure of adequate protection. These will require foreign machinery. In the export trade peanuts, peanut oil, beans, straw braid, silks, eggs, albumen, hides, skins, tallow, walnuts, hemp, etc., are among the products which find a market in America.

In the opinion of these acquainted with local conditions there is in Tsinanfu a splendid opportunity for American import and export trade on a large scale, provided it is undertaken by a concern with sufficient capital to do it in a big way. The time is opportune for the inauguration of such an undertaking along the lines laid down.

SHARK FISHING ON ASIATIC COAST.

The Manchuria Marine Products Co. experimented upon the use of goose fish nets for "guchi" fishery off the Hsiung-yocheng coast last season, and also the use of cod-fishing boats about the Elliot group. The former experiment turned out well and the same kind of nets are being employed in "guchi" fisheries in Korean waters. The exact results of the latter experiment are unknown, but that it was anything but a failure has been well established.

The company is now planning to try shark fishing in the sea area 60 miles long stretching from Ento Island to Shantung promontory. It will dispense with sailors altogether and intends to rent the depot boat *Kwansui Maru* from the Kwangtung Marine Products Union and to equip it with a device to manipulate the cork lines of the nets. This new fishing method has several advantages, one of which is the increase of working hours. This advantage is much valued, especially because the season runs only for the two months of July and August.

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Shanghai Dock & Engineering Co., Ltd.

Windmills
Defiance Machine Works.

Water Softeners
Babcock & Wilcox Ltd.

Wood Working Machinery
American Tool Works Co.
Defiance Machine Works.
Lodge & Shipley Machine Tool Co.
Shanghai Dock & Engineering Co., Ltd.

THE FAR EASTERN REVIEW

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"Most modern wars may be ultimately traced to national antipathies which have been largely created by newspaper invectives and the gross partiality of newspaper representations." LECKY'S "England in the Eighteenth Century"

ROADS TOWARDS PEACE

AN EXPOSITION OF THE FUNDAMENTAL COMMERCIAL PROBLEMS WHICH MAKE FOR NATIONAL DISCORD AND STRIFE.

WITH SPECIAL REFERENCE TO

THE ACTIVITIES OF OFFICIAL TRADE ORGANIZATIONS IN CHINA.

THE ELIMINATION OF THE GERMAN "BLIGHT."

THE RELATION OF CHINA TO THE WAR IN EUROPE.

By Geo. Bronson Rea.

The FAR EASTERN REVIEW has endeavored to maintain an impartial attitude and observe strict neutrality in thought and deed concerning the war in Europe and the issues at question. We hold very decided opinions as to the underlying issues of the war, and our sympathies may be with one or the other of the opposing sides, but no matter how emphatic our political convictions, or sincere our friendships, we cannot permit pure sentiment to influence our editorial policy, or close our eyes to certain broad phases of the great contest.

We hold to the firm conviction that there are fundamental issues involved in this tremendous life and death struggle between the protagonists of our common civilization, that have a most important bearing on the present and future happiness and welfare of the American people, and the preservation of traditional friendships with other nations. There are vital basic principles at stake on the outcome of the war, affecting not only the future of the belligerent States, but more particularly the well-being of America and the maintenance and solidification of those common ties which unite the two great Anglo-Saxon peoples.

In obedience to the proclamation of the President of the country to which we owe allegiance, we have been silent on many matters, but these questions are so vital, so pregnant with future discord and so inimical to the preservation of harmonious intercourse and complete understanding, that we feel impelled to rise above the level of country, cast aside our shackles of neutrality, and present our thoughts as a free and independent being. It is possible that we may be misconstrued, but our facts are such that if read in the same spirit of fairness that they are written, we cannot be misunderstood.

Between America and Britain there must always arise questions and disputes, but no matter how grave these issues, or how strained the relations may become, the time is forever past when these two nations will resort to the sword as the final arbiter of national dissentions. Blood *is* thicker than water, and in the final analysis, blood will tell. Mr. Bryan, the American Secretary of State, replied in response to the Japanese Ambassador last May, when the latter asked if his words were final on the California land dispute, "There can be no last word between friends." If this is the attitude America assumes towards a friend of fifty years standing, a friend of another race, another color, and opposite religious and political creeds, it proclaims loudly to the world that nothing can come between the two peoples, whose language, ideals, thoughts and blood spring from a common source. There can be no last word between friends, nor can there ever again arise any conceivable difficulty between America and Britain which cannot be solved by frank discussion and arbitration. Britain and America understand each other. The pride Americans take in their own country makes them respect that from which they sprang. Notwithstanding the great influx of immigrants from other European countries, with the

resultant intermarriage of the races, the old Anglo-Saxon element mixing with the Celt, still predominates and exerts the greatest influence in the public affairs of America. The old blood strain has been preserved in all its purity, and the only difference between the American of Anglo-Saxon descent, and his prototype in the Mother Countries is the accident of birth and the influence of environment. The spirit of the American Colonists burns as brightly to-day in their descendants as it did in the memorable years of 1776, and they can understand and appreciate to the full the motives and mind workings of the Mother race, with a full comprehension of all her subtleties and a keen perception of her defects. Americans render due tribute to her greatness. They understand and sympathize with her in the constant struggles with those tremendous political problems and industrial forces which at times, as in the case of Egypt, irresistibly sweep her forward on the path of Empire, or compel her to adopt with grim premeditation those measures for the acquisition of territory, which have colored the map of the world with bright red splashes. It is these pages of England's history, which find no admiration in the breasts of the free and liberty loving descendants of the American colonists. As the cradle of free thought, free speech, a free press, religious toleration, and all those glorious principles which emancipated the human race from the medieval yoke of tyranny, and established the rights of the individual; as the birth-place of those sturdy, God-fearing, intrepid pioneers who blazed the way for civilization and created a nation out of a boundless wilderness,—in brief, it is as the home of their Fathers that Americans respect and venerate England. Now when the national existence of the parent country is threatened, and her sons are again paying the toll of blood to defend and maintain those great fundamental principles of a free people against the onslaught of absolutism and militarism, which acknowledges no right but might, when England is paying the price for her proud imperialism, her kindred on the other shores of the Atlantic, though bound by the laws of neutrality from open aid, can only hold one sentiment, which transcends the spirit of friendship, and takes the form of a fervent prayer for her speedy victory. But with all these sentiments which compel Americans to side with Great Britain, they can also appreciate the position of Germany, and extend a heart-felt sympathy to her people, and deplore a conflict which is costing both sides so dearly.

Nothing short of a deliberate attempt to repeat the folly of 1812 which struck at the very root of American independence, could move the American people to again consider open hostilities with Great Britain. The young Republic entered into that war to preserve its hard won independence and resist the British doctrine of Right of Search by Right of Might. To-day, after a century of peace, the American people, if pushed to the wall, would as willingly go to war in defence of any attempt to revive this doctrine or any other policy which threatens their independence and unrestricted enjoyment of the fundamental rights of a free and independent people to trade and compete for their legitimate participation in the world's commerce. No nation understands the American temperament better than the one so closely allied by the ties of blood and a common civilization, and, knowing this, it is impossible to believe that Great Britain would ever be led into any position, or resort to any act of coercion or take any unfair advantage against America, which would arouse all the latent and hereditary fighting spirit characteristic of the common race. And it is inconceivable that America would deliberately commit any breach of international law, which would justify such action.

As the fraternal ties of blood and a common civilization and tongue cement the bonds between Britain and America, so do those higher attributes of a grateful people compel the hearts of all true Americans to beat in sympathy with those who made their freedom possible, and no matter what the issue, whether they are right or whether they are wrong, when their national existence is at stake, there is only one sentiment that can find lodgment in the hearts of Americans towards their traditional friends, the fellow countrymen of the Marquis de Lafayette. In peace or in war, there is a bond of sympathy, a union of thought and a complete understanding which attract and hold together the two greatest Republics of modern times, and any force which threatens the extinction of republican France, and the subversion of those principles we have each purchased so dearly, to the doctrine of absolutism as typified by any other Power, must expect to receive the cordial disfavor of all honest and patriotic Americans. There exists amongst Americans that undying sense of gratitude, that feeling of comradeship, that union of political ideals, that no formal declaration of neutrality can stifle. Americans venerate and understand England, but their hearts are with France. Americans might hesitate before openly supporting any other country, but there would be no scruples, no doubts about their attitude where France is concerned. American sympathy will always side with France whenever she is attacked, and all the neutrality proclamations in the world cannot eradicate that sentiment.

Germany as a nation arrived on the political stage too late to overturn the natural laws of consanguinity, and although Americans have a full appreciation of her problems and can entertain a true sympathy for her people in this great crisis, it is impossible for her publicists, her statesmen, her learned professors or other apologists to adduce any reasons or arguments which can shake the faith of Americans in their fellow Republic of France, or make them overlook the timely and whole hearted co-operation which brought us into national existence. They can and do feel deeply for the German people at this time but their first duty is to obey the natural promptings of their inner hearts and respond to the appeals of those who are battling under the Tricolor to preserve their Country from the yoke of one who if victorious would ignore the rights of the many and proclaim it as "MY PROVINCE," and refer to them as "MY SUBJECTS." Germany cannot hope to influence American opinion to turn against those who were their friends, before there was a Germany, or ignore those blood ties which bind

America to Britain. It was Anglo-Saxon enterprise and indomitable will that settled the wilds of America, and created the nation, and it was the generous sympathy of France with her fleet and men that made possible its existence as an independent government, long before Germany came into being as a united country. The Germans arrived in America after the hard work of colonization was completed, and although there were still boundless tracts to be opened for settlement, the German immigrants for the greater part settled in the larger cities and towns as small shopkeepers. The serious work of battling against nature and the savage red men, in the depths of the primeval forests and boundless prairies, and bringing the land under civilization, is the crown of the Anglo-Saxon race. America owes much to her German citizens but the debt is small indeed compared to that it acknowledges to the race of its Fathers, and the people of France.

If these thoughts constitute a breach of neutrality, then we plead guilty.

Since the commencement of the war we have clearly perceived that incidents would transpire and questions arise which would call for an exhibition of all that was highest and noblest in our national characters, in order to avoid being drawn into the vortex of the European maelstrom of death and destruction, and that controversies would be forced upon us through the interpretation of the law of the sea, by the Navies of the Allies. These issues have now unfortunately arisen, and have been faced on both sides with a spirit of fair-mindedness, and will be settled diplomatically and peaceably.

The questions now occupying the serious thought of the Governments of the United States and the Allies is merely another phase of the greater commercial issue indirectly responsible for the war itself. The political strategics of Europe embraced in the present situation are so involved that no human being can grasp all the fine points of such a stupendous subject nor is any one competent to pass an impartial opinion upon it at this time. In after years when all the facts are known and the secret archives of the Chancelleries are accessible, historians will be able to draw a true perspective and arrive at an intelligent appreciation of the present tangle of diplomatic truths, half truths and downright falsehoods. At present, all the belligerents believe that they are in the right and fighting for the highest interests of their country. As an impartial and neutral observer we can accept without hesitation the plea of justification advanced by the Allies, and can sympathize deeply with the desires of Europe to put an end to militarism as represented by Germany. We are told that Prussian militarism is a menace to the whole world, and we accept this dogma, but we also hold that militarism on land is as essential to the security and independence of the Continental States, as militarism on the sea is deemed imperative for the safety and preservation of the British Empire and the perpetuation of Britain's position as the greatest world Power. The existence of the one compels the other. If Britain is justified in the adoption of the two to one battleship program to maintain her position, then Germany, due to her geographical position, surrounded by powerful neighbors on all sides, is also fully warranted in adopting a military policy calculated to oppose any coalition or united aggressive action by her neighbours. If Germany deemed it essential to build a strong navy for the protection of her rapidly growing mercantile marine and commerce, she merely followed the natural law of self-preservation, which every nation at some time or other must have recourse to, or be annihilated by some stronger Power. Britain's geographical position and her immense commerce and mercantile marine demand that the mastery of the sea shall be preserved to her at all costs, and if any other country should follow the same natural law of self-preservation, Britain would feel compelled to increase her fleet to maintain her predominance, and when the burden of competition became too strong for the taxpayer to keep up the strain, an issue would be found as an excuse to crush the growing rival, before he became too formidable. This also is merely the application of the law of self-preservation, and when we say Great Britain, it is because that nation holds the dominant position at this time. It would apply as well to any other country, if conditions were changed. From the facts which provoked the war, the burden of evidence is against Germany and Austria, but we desire to place ourselves on record as recognizing that Americans must hold a fellow feeling for the Germans in all that pertains to the deeper and vital commercial issues which lie at the root of the existing trouble.

We look on the present picture of carnage and desolation in Europe with feelings of genuine horror and amazement, as we feel that it was all so unnecessary and could have been avoided. We have read and re-read the Blue Books, White Books, Yellow Books and other official papers dealing with the political strategics involved, but we have sought in vain for any reference to, or admission that it existed, of the fundamental commercial issues at stake. The object of all the official publications is to lay the burden of the crime on the "other fellow" and it could all have been summed up in a few sentences.

"We have stood this thing for the last seven years and cannot stand it any longer."

These words of the Czar, in the face of Austria's attempt to humble and pave the way for the absorption of little Servia, and the mobilization of the Russian forces to back up his determination, forced the issue. "The shining armour" of the Kaiser failed to dazzle the Czar as it did eight years ago when Austria annexed Bosnia and Herzegovina. The Czar called the Kaiser's hand this time, and all Europe was plunged into hostilities. The discussion of these grave political events which forced the war, have temporarily diverted attention from the deeper and compelling forces whose impulses have created and intensified national hate and converted the highly cultured inhabitants of Europe into bloodthirsty and vengeful opponents, deaf to all

appeals to reason, intolerant of criticism, and apprehensive of the truth.

We have watched with deep concern the progress of the commercial battle for supremacy in the Far East during the last twelve years and have drawn our own conclusions from the events, and we consider it a journalistic obligation to express our thoughts on these underlying issues of the war, which constitute a menace to the permanent peace of the world, and a barrier to the maintenance of cordial and sympathetic relations between Great Britain and America. These conclusions have been arrived at after the most careful observation and mature study of the methods resorted to by various nationalities to secure the trade supremacy in this, the greatest potential market of the world, methods which are concealed from popular knowledge at home where a healthy public opinion and impartial press would condemn and demand their immediate discontinuance. Commercial and diplomatic practices universally discarded and impossible to employ in the centers of our Western civilization, and principles which cannot be applied in any other part of the world, without provoking immediate hostilities from an outraged nation, are brazenly advocated and enforced on a defenceless and inexperienced people, whose land has been singled out as the principal strategic theater of commercial warfare; the world's battle-ground for the supremacy of trade and the acquisition of territory. Far away in the centers of Western culture and civilization, where high principled and broad minded statesmen and apostles of peace and good-will labor to cement the bonds of friendship between the nations, the echoes of the struggle in China, with all its sordid and dishonorable details are rarely heard. Here on the ground, on the firing line of trade expansion, witnessing the intrigues and manœuvers, the skirmishes and battles, listening to the guns of hate and explosions of wrath, and the small fire of jealousy, the trained eye-witness perceives and appreciates to the full the deadly seriousness and intensity of that titanic struggle for the survival of the fittest, of which the fearful carnage on the fair fields of Europe, is but a temporary and secondary phase.

We profess that although the issues between some of the European States are purely political, relating to territorial boundaries, the main object of the larger manufacturing nations is the defense of existing markets and the conquest of new and exclusive spheres of commercial influence. Here in China we have watched with absorbing interest the workings of secret diplomacy and the machinations of national organizations for the advancement of special interests. We have observed with bewilderment the growing tendency to consider as "scraps of paper" the many solemn obligations for the preservation of China's integrity, and the repeated diplomatic assurances of the inviolability of the Open Door. We can trace step by step the various incidents and events, which have contributed once more to the closing of this Door. **For the Door is Closed again, with America on the outside "holding the bag," all because a high minded Executive has confided in the binding power of a piece of paper. That assertion we are prepared to prove to the hilt and maintain against any arguments in refutation.** We have witnessed the keen rivalry between the two greatest commercial antagonists for the control of this market, and we are firm in our belief, that once the German "blight" is obliterated, the campaign of abuse and calumny, the flow of invective and falsehoods will be turned against America as the next formidable competitor, until greedy and unscrupulous interests, aided by a rabid and partial press, will undermine the foundations of Anglo-American friendship and demand the industrial annihilation of America, in the same implacable spirit now demonstrated towards Germany.

We are most emphatic in our belief that the greatest possible influence for future misunderstandings between Great Britain and America will arise from some clash of interests or misinterpretation of policies in the Far East, for we have witnessed the genesis and growth of national bitterness and hate as the result of a persistent propaganda to create animosities between Germany and Great Britain, because of the commercial success of the former, and we feel assured that unless the root of the evil influence is destroyed it is only a question of time when the campaign will be turned on America. These conflicting commercial and financial interests contending for the control of new markets, and fresh opportunities for the investment of capital, make for national distrust and jealousy, while the application of national policies for the enlargement of territories or acquisition of spheres of influence, which debar other nations from the full and free enjoyment of their treaty rights, are a constant menace to the peace of the world. As America refrains from adopting similar lines of action, it is obvious that her interests must inevitably suffer, and as her people gradually awake to a full realization that their rights are being interfered with, sooner or later the country will be aroused and compel its Government to demand an explanation, or adopt retaliatory measures in other quarters.

If the war in Europe could have been avoided, we are confident that the situation in the Far East would have brought about a climax in the relations of various Powers, which could only have been peaceably and honorably overcome, by a re-declaration to the adherence of the Open Door doctrine. So far have the Powers travelled in the last few years in the endeavor to amicably solve the Far Eastern problem, that unless a return is made to the starting point, there must soon be a parting of the ways for some. Politics, finance and commerce are so closely linked together in the problem, that it is almost impossible for any one except the trained observer to distinguish between them, but it may be accepted as a cardinal fact that every political and financial move in China is inspired by the desire for commercial aggrandizement, disguised under the cloak of some administrative, industrial or railway loan.

Nearly every such financial transaction with this weak and impoverished Government provides an opportunity for the enforcement of terms which in one way or another are used as stepping stones to something else, and as a means of undermining the administrative independence of the Chinese Government. And the

pity of it is that many intelligent Chinese officials have become so inoculated with the insidious arguments of foreigners who defend these practices, that they implicitly believe the highest interests of the country are being served by advocating the perpetuation of the terms. China has seen her Customs Service taken over bodily and administered by Aliens, on the theory that the Chinese could not be trusted to direct this department to the satisfaction of the foreign bondholders; her Salt Gabelle is administered by foreigners; other loans are employed as a vehicle for the creation of new posts for foreigners; her railway loans are employed as instruments for the maintenance of organizations of foreign officials paid by the Chinese Government and nominally servants of China, but whose first allegiance is to the Corporations responsible for their employment. China has so far successfully resisted any attempt to apply the Customs precedent to her Railway Department, but if her borrowings are continued, the day will come in the not distant future when in the interests of the foreign bondholders and foreign commercial interests, her independence will be taken from her, and a Financial Commission supported by the guns of Europe and Japan will direct her affairs. This step has already been very seriously considered by the foreign Governments behind the Quintuple Group as the only solution to China's financial troubles, and had the war in Europe been delayed, and had China persevered in her efforts to raise another large administrative loan, the creation of a Debt Commission to control her finances would have been proposed as essential for the protection of her creditors. Foreign financial administration would be soon followed by foreign control of railways and other official productive enterprises, and the nation dominating the Financial Commission would reap the rewards in trade openings for its manufacturers.

The struggle for trade supremacy in China is stupendous. The very national existence of the country is at stake. We have seen Korea absorbed, Northern and Southern Manchuria parcelled off and trespassers warned away, Mongolia and Tibet alienated, Inner Mongolia threatened, and the closing in on Shantung, Fukien, the Yangtsze Valley and the Southwest Provinces; all in the interests of foreign trade expansion, and every move excused and defended as being quite in accord with solemn assurances to respect China's integrity, and the rights of America to equal opportunity. The upheaval in Europe is probably all that saved China this year from the open revival of the Spheres of Influence policy. These high crimes against the life of a weak and defenseless nation groping through the tardy process of evolution from medieval darkness into the light of modern culture, are incited by the natural pressure of those tremendous financial and industrial forces seeking expansion from the constricted confines of the stronger, more advanced and over-populated manufacturing countries.

With America elbowed out of China, through the re-establishment of the Spheres of Influence, and the disappearance of her influence in financial affairs, a clear road is open for the imposition of a Debt Commission, and the ultimate monopolization of railway and industrial enterprises by the great European lending Powers who would be represented in this control. With her financial independence gone, and the direction of all new productive enterprises concentrated in the Commission, it would be many, many years, if ever, before China could free herself from the yoke. During these decades of great industrial development, of railway construction, opening and exploitation of mines, equipment of Government arsenals, mints, and factories, the plant and material would come from those nations having the preponderance of representation and influence on the Debt Commission. Perhaps after all it would be best for the Chinese people. If we ignore the rights of the Chinese to solve their own problems in their own way, and accept the arguments of selfish interests whose sole object is to dominate the market, there is no doubt that China would be materially benefited, but on the other hand she could never escape from financial thraldom, and her days as a nation would be numbered. The contention that China would be benefited is only advanced to distract attention from the inevitable conquest of the country through the operation of the laws of modern industry and political finance. The days of territorial expansion by discovery and colonization or conquest by force of arms, has given way to the more crafty kid-gloved methods of dominating weak and improvident nations through the insidious operations of political finance. The ultimate end is the same though disguised behind hypocritical protestations of altruistic aims and professions of Christian sympathy for the poor down-trodden and tax-burdened victims of political philantrophy.

This view was undoubtedly held by President Wilson when he withdrew support from the American Financial Group and refused to become a party to any loan which threatened the administrative independence of the Chinese Government. The withdrawal of this support and the disappearance of American influence from China, has only served to strengthen the position of others who hold contrary opinions and policies, and who are not deterred by any sympathetic considerations for China from putting them into operation.

Marching behind the vanguard of national finance, are the solid forces of a united manufacturing industry, prepared to hold the commercial positions and enjoy the fruits of the financial victories. It is the pressure of this irresistible industrial force, which compels Governments and financiers to apply methods and principles in China, that no other country in the world could accept and at the same time retain its self -respect. The industrial pressure demands new markets and wots not nor cares not how they are obtained. This force is blind alike to national honor, the sanctity of agreements, the integrity of China, or anything else that stands in its way, so long as the profits from loan flotations and markets for materials are assured, and here lies the root of the world's commercial troubles. The animosities engendered by the clash of opposing industrial interests, and the recriminations and invectives of a rabid press, are at the bottom of the consuming hate brought to the surface in all its fury, in the present conflict between Great Britain and Germany. The initial political features of the war have

temporarily disappeared and the conflict has settled down to a life and death grapple between the two most formidable commercial competitors. The venomous enmity manifested by both sides is not altogether the rapid outgrowth of natural feelings engendered by the war itself, but has its genesis in the long protracted commercial rivalry and struggle for the acquisition of new markets. The individual jealousy between trading concerns, has developed into open abuse and insult indulged in by misguided patriots and misinformed newspapers.

We have closely followed the germination of Anglo-German jealousy here in the Far East where the commercial fight is the fiercest, and we hold to the belief that the greatest contributory element to its expansion into national hate and enmity, has been the uncalled-for expression of newspaper opinions, aspersions and invectives, and the misdirected energies of national organizations. The activities of the latter are to our mind directly responsible for much of the bitter feeling existing between Great Britain and Germany, **and as America is embraced in the campaign of misrepresentation and villification we have no hesitation in expressing our frank and honest views on this subject.** As our experience covers the campaign waged on the battlefield of China, the principal theater of the world's commercial struggles, as the publisher of the only engineering and industrial journal in the field, we are in possession of facts whose accuracy cannot be disputed.

Before analyzing the activities of national industrial organizations for the advancement of their special interests in China, it will be necessary to describe briefly the industrial and engineering situation in China, prior to 1910, when the first open movement in the campaign of hatred was initiated in London.

The struggle for trade supremacy in China, may be said to have originated in the late nineties, and found expression in the creation of exclusive spheres for the advancement of special national interests. These Spheres of Influence were accurately delimited in the Non-Alienation Declarations extracted from the Chinese Government under heavy diplomatic pressure. As a corollary to these spheres, the various Powers in their determination to hold the territory for the expansion of their exclusive interests, adopted a definite programme for the construction of political railways, at China's expense. The policies of all European Powers in China, are reflected in the demands and intrigues for railway concessions to advance the trade and prosperity of the various leased ports, and adjacent territories outside the jurisdiction of the Chinese Government. The interests of China were never consulted, although she had to pay the bills.

The Manchurian lines were designed to facilitate Russia's advance eastwards to an ice free port; the Shantung concessions were avowedly a part of Germany's plan to control the province, and attract the trade of Northern China through the leased port of Tsingtau; the Peking-Hankow, Chengtai and Pienlo lines, were all a part of Franco-Russian policy working through their Belgian partner; the Yangtsze lines were designed for the purpose of building a ringed fence around the British preserve; the Canton-Kowloon railway was to be the instrument for diverting the traffic of Southern China to Hongkong. By the insertion of a prohibitive clause in the Loan Agreement against the construction of a competitive line, and the skillful location which carried it away from the river, where China could have improved the port of Whampoa, the commercial predominance of Hongkong has been assured at the expense of Canton. The Yunnan lines and other French rights are intended to divert the trade of Southern and Southwest China, from its natural outlet at Canton, to the French port of Haiphong; the Japanese lines in Manchuria, (the Kirin-Changchun, Kirin-Hunyun, and the Inner Mongolian lines) are openly a part of the plan to prevent other nations from sharing in Japan's particular "pie;" the Japanese pretension to the Foochow-Nanchang line is another manifestation of their policy to dominate Fukien, and find an outlet to their anticipated sphere in Kiangsi; the British section of the Canton-Hankow line is another indication of their determination to control the trade routes converging on Hongkong; in fact every railway concession has its special political significance, and always for the advancement of foreign interests rather than those of the country who pays the bill. The only foreign railway loans or contracts in China devoid of political significance are the Peking-Mukden loan, the Tao-Ching purchase, and the recent contract for the Shasi-Shingifu line. The Hukuang lines were partially freed from political tendencies by internationalization, but the influence of special interests is conspicuous in the distribution or control of the sections. In fact, it may be accepted, that the internationalization of the finances, is a mere farce, and present tendencies indicate that the southern section of the line will be exclusively British. Perhaps the same rule will have to be applied to the other sections, as the only means to secure an equitable expression of the Loan Agreement. Notwithstanding the Open Door Declarations, the battle for railway concessions in China has been marked by a tenacious determination on the part of the Powers to control certain areas, as preferential commercial spheres to provide an outlet for their respective manufacturing industries.

All the Powers arbitrarily designated certain approved financial Groups or Corporations as the official instruments to execute the railway contracts so obtained, and then protected these favored few from the competition of other interests. A monopoly was thereby created, which assured the imposition and perpetuation of certain loan terms on the Chinese Government, calculated to ultimately undermine its administrative independence. Had unrestricted competition been permitted, other reputable and experienced construction corporations could have entered the field, enabling China to free herself from these terms, and prevent the concentration of national influence in any one corporation who in a given crisis might assume a dominant voice in her political affairs. The enforcement of such a monopoly, can only be interpreted in one way, and that points strongly to the suspicion that the favored corporations enjoying the full confidence and support of their respective Governments were to be used as the instruments for the advancement of special political

designs. This concealed crime against the life of an inexperienced nation can never be justified by any arguments. China was entitled to the benefit of competition. It was refused her. The deduction is obvious and points to some ulterior motive, otherwise the foreign Governments stand pilloried as being in collusion with favored interests, and opposing the legitimate right of their other nationals to participate in the development of China.

The British Government for instance would find it extremely difficult to explain to the British public, why in face of repeated protests it sanctioned and maintained a monopoly of the Chinese railway business for sixteen years in favor of one commercial organization, without condemning itself before its own people or acknowledging a devious policy towards China. It is useless and unsatisfactory to explain that British railway development in China, could solely be confided to and safeguarded by one commercial corporation and that the world renowned and experienced British construction firms, the Builders of the Empire, could not be trusted to do business with China. The only possible political justification for such illegal discrimination would lie in the fact that the nature of British policy in China was such, that the entrance of others in the field would jeopardize its success, and therefore they could not be permitted to participate. This deduction would in turn imply that British policy in China cannot bear the search light of public scrutiny and criticism. As we are content to believe that such an insinuation against the motives of the British Government is baseless, there remains only one other construction to account for the monopoly, one which absolves the Government, but implicates some individual. If the Government is exonerated from the onus of maintaining a secret monopoly which to our exact knowledge has caused enormous losses to unsuspecting competitors, then the blame falls on some official of the Government, who for specific reasons of his own has upheld the monopoly in defiance of all British ideas of equality. The question naturally arises, who is the official in the British Foreign Office who has had the temerity and political influence to close the door in China to all others than the favored combination? We know of many British firms who have expended large sums to secure a legitimate share of this business, but have been compelled to retire from the field on account of this unfair monopoly upheld by all the strength of the Foreign Office and the Legation at Peking. It is necessary for us to emphasize the existence and the effects of this monopoly for the financing and construction of railways in China, not from any special bias; but because of its far reaching influence on other questions calculated to strain friendly relations between Great Britain and other countries, and as the underlying fact which has been overlooked in the campaign of newspaper invective against Germany and America.

In France and Germany, the official groups were representative of the financial interests of the country, and distributed the orders for materials amongst their allied manufacturers. There was never any great protest made against the maintenance of these monopolies. In America, the official group was composed of the four greatest firms controlling the finances of the country, and although it was recognized that the monopoly accorded the Group was un-American, and opposed to the legitimate rights of others, there were certain financial and other conditions, which temporarily justified their sole enjoyment of official support. These conditions have ceased to exist.

The operation of the British monopoly in China, concentrated the purchasing of all railway material in the hands of one commercial firm, at a stipulated commission. This commercial firm for some time acted in a dual capacity as the representative of a select combination of British manufacturers, and as purchasing agents of the railways. The era of railway construction in China, induced many British manufacturers unfamiliar with the precise situation, to compete for the supply of materials by either sending their own representatives to China, or confiding their interests to some local firm. As long, however, as the official purchasing agents competed for the business in their capacity as an independent firm, it is obvious that they held a decided advantage over all others. In fact, they controlled the business, not only as purchasing agents, but as one of the principals of the official corporation, who engaged the services of the construction engineers, on whose approval tenders were awarded by the Chinese Directors-General. An analysis of the facts clearly indicates how absolutely impossible it could be made for any outside British firm to break through the ring and successfully compete for the supply of railway materials if the purchasing agents desired to freeze them out. The official organization having the exclusive support of the British Government, is a combination of the greatest British financial institution and the leading British commercial firm in China. The British loan agreements all specify that the purchase of materials for the equipment of the lines, shall be carried out by the official corporation at a stipulated commission. This purchasing power is then delegated by the Corporation to the commercial firm. The official Corporation nominates the Engineer-in-Chief. With an Engineer-in-Chief and technical staff indirectly owing their appointment to the commercial organization, who acted as purchasing agents of the railway, and as the selling agents of certain manufacturers, the tendency of the engineer, in loyalty to his real employers, would be to draft his specifications for materials so that only the firms represented by the purchasing agents would be able to secure the business. As the Engineer-in-Chief had the power to accept or reject tenders, the way was open for the operation of a system which no competitor could hope to beat. The principle of the scheme was all wrong, as business could be so manipulated if desired to preserve a monopoly for one clique of manufacturers.

Many manufacturers sent their own representatives or established agencies with other firms in Shanghai, and to the uninitiated there was every indication of a boom in machinery and railway supplies. There was a boom, but the British manufacturers were the gullible ones whose money paid for the upkeep and salaries of the independent engineering firms in

Shanghai. Business was here, but they failed to get it. Slowly it dawned on these firms that they were "up against it" and were being discriminated against by the practical working of the policy of their own Government, but with characteristic British reticence they held their tongues and said little. They found that the strength of the monopoly was so great in China, that they could not afford to openly incur its enmity. British newspapers in China, accepting the advertising support of these firms, were also apparently unwilling to publish a word in opposition to the official policy. If any British editor in China has ever honestly raised his voice in denunciation of this monopoly, we do not recall it. On the other hand we have noted a studied indifference to refer to its existence except to defend and apologize for it as essential to the success of British policy.

The independent firms representing many of the largest British manufacturers at home, entitled to equal rights to compete for materials in a purely British railway concession, finally drafted a protest against the existence and working of the monopoly, for presentation to the British Minister at Peking. We have before us as we write, a copy of this protest, dated Shanghai, 23rd of May, 1910, addressed to W. G. Max Muller, Esq., M.V.O., H.B.M.'s Charge d'Affaires, Peking. It is therefore on record that a protest was made, and signed by several reputable British firms in China, representing some of the largest manufacturers at home. It is also apparent that little was ever done to apply a remedy.

Not only were the manufacturers and their agents refused justice by the Foreign Office, but the monopoly was made to extend to the great construction firms, such as Messrs. Pearson & Sons, Pauling & Co., and other firms with a world wide reputation as successful railway and Empire builders. We have exact knowledge that one of these firms has expended a large fortune in its endeavours to exercise its rights to do business in China, and the other has also maintained high salaried representatives and offices in China for a number of years in the hope of securing railway contracts. Other firms also have felt the full effect of the monopoly. It may be said without exaggeration, that up to date, the profits accruing to the official organization from the equipment of railways in China, is almost fully offset by the cash out of pocket losses incurred by independent construction firms and manufacturers who have unsuccessfully tried to obtain business. The British Government or whoever is responsible has simply extracted money from many pockets and diverted it to the coffers of one concern ; a sort of legalized highway robbery without any hope of redress on the part of the victims.

The exact situation, however, was never fully understood by the manufacturers at home, and a loyal British press resolutely stood by the Foreign Office and preserved a mute silence concerning this high handed interference with the expansion of British trade by free competition. The manufacturers who failed to secure orders, never sought for the reasons at home, nor do they fully realize to this day, all that the working of the monopoly meant to them. They could see German trade expanding steadily in China, without any particular good reason, and they naturally jumped to the conclusion that German and American competition was the cause of their own failure. They were losing out, but did not know why. The Special Commissioner of "The Engineer" writing to that journal from Shanghai, under date of August 22nd, 1913, fully explained the situation, in a guarded and conservative manner, corroborating the viewpoint we have always held in these columns.

In addition to the working of the monopoly, there were other excellent reasons why British engineering trade in China failed to keep abreast of their German competitors. We confine our comparison for the present to the Germans, as American competition had never been a serious one, despite the allegations of those who have coupled the two together as the reason for British failure. THE FAR EASTERN REVIEW is entitled to speak with authority on these matters, as for over ten years we have maintained confidential and friendly relations with nearly every engineering concern in Shanghai, irrespective of nationality. We have watched the growth of every engineering and machinery firm in Shanghai, and know whereof we speak. For many years the best equipped engineering firms in China, were undoubtedly the Germans. They had well organized staffs of engineering specialists and salesmen, who systematically covered the country. By patience, application to business and a careful study of the requirements of the field, they built up a profitable trade.

"The painstaking persistence of the German firms and their readiness to meet the wants of customers brought their just reward. By untiring perseverance, adaptability and willingness to run considerable commercial risks," Germany built up a large engineering business in China in the last decade, while the British manufacturers were still undecided about the importance of the market, and refused to appropriate funds for advertising and propaganda work. Our own experience tells us that the German engineering firms were liberal advertisers in engineering journals, while the more conservative British either refrained altogether or preferred to expend their technical advertising appropriations in general circulating mediums. The Germans specialized, studied the field, sent out experts, made friends with the Chinese, quoted low prices and favorable terms, and *advertised*, and then slowly but surely reaped their reward. We have read with surprise the abuse and criticism in the British press, about the immorality of German business methods in China, that their Diplomatic and Consular officials used their influence to secure contracts, that unusually long credits were given, in other words, that their methods were a "blight," and, as British manufacturers could not or would not modify their conservative ideas to meet changed conditions, and because British diplomatic officials were above using their influence for commercial ends, therefore the "disreputable" German competition must be exterminated at any cost. We have read so much in the last few months about German methods in China, that we marvel that these alleged transactions were not

condemned years ago. We have been on intimate terms with almost all the engineering firms in China for ten years, and have also a wide acquaintance amongst the high Chinese officials who have the placing of engineering orders, yet we have never heard any distinction drawn between the methods of any foreigners in China by those most directly interested. As far as Chinese Government contracts are concerned, there is no distinguishable difference between the methods of Germany and any other country. To our mind they are all more or less open to criticism, and there is little profit to be gained in splitting hairs about differences in business ethics. If Germany has bribed Chinese officials to secure business, if the German Minister has demanded contracts for his nationals, and used pressure to enforce acquiescence, well, who has the right to complain? "Let him who is not guilty cast the first stone." And we desire to emphasize the fact, that the last ones who are entitled to pose as judges of German tactics, are our British friends, for we can cite as many cases where devious methods have been employed by British firms, as can be adduced against the Germans. The German Government forced China to concede the rights to the Shantung railways and mines, and the northern section of the Tsinpu Railway. Did Britain obtain her railway concessions as a free and generous gift from the Chinese Government?

If German business methods with the Chinese Government are so repugnant to British morality, it would open their eyes if we probe too deeply into some of the British deals which have all the hall marks of respectability and honesty. It must not be overlooked that for years the British and German official financial institutions in China, operated hand-in-hand, and even after the severance of official ties, a strong German element sat on the Directorate of the British institution even to the outbreak of hostilities. It is rather late in the day for British writers to blacken the business reputation of the Germans, for a close study of facts will disclose that their own trusted champions are tarred with the same stick. The hullabaloo about the gross immorality of German methods in China may sound patriotic enough to uninformed people in England, whose hatred is being fired by this sort of rubbish, but to those conversant with events in China for the last decade, it has the ring of hypocrisy and the stamp of insincerity. If Germany has been dishonorable in her dealings with the Chinese Government, then so have the British, the French, Belgians, Russians and at times the Americans and last but not least the Japanese. If Germany's commercial propaganda to advance her interests in China is open to severe condemnation, because of displacing British trade, what is the verdict of the hyper-sensitive British critic on the tactics of their well-beloved Ally? The Maritime Customs Trade Reports will indicate, and every honest British trader in China will corroborate, that the most formidable competition he has to contend against is not that of Germany, or even America, but the well organized and officially subsidized trade propaganda of Japan. Has Germany adopted the same methods in Shantung as Japan did in Manchuria? Then why, with all the facts clearly before the world, does the British press vent their spleen on Germany alone, whose success is due in part to methods that all others are at liberty to adopt in competition.

Because independent British manufacturers were negligent in protecting their own interests at home, and meekly submitted to the establishment and maintenance of a monopoly for a favored few, and so failed to secure business, it is no reason why the Germans should now shoulder the blame. The fault lies solely with their own Government, who deliberately closed the door of equal opportunity in their face. If the British manufacturer is now fired to the point of purifying foreign trade, in his blind rage against Germany, let him stop and calmly reason with himself, and look the facts squarely in the face, and then clean out his own Augean stables before attempting to regenerate Germany and her alleged fellow culprit, America.

The writers who howl the most about German success in China, are ignorant of the fact that for several years, there were only a few British engineering firms on the ground, and these were outclassed in every point by their German competitors. Even to this day, despite the establishment of several highly capable British engineering combinations, it is still true that the engineering department of at least one German firm is the best equipped in the field. Is it any wonder that leading British and American engineering manufacturers entrusted their interests in China to Germans rather than to firms of their own nationality? The manufacturer is only concerned about orders, and will not be bound by any silly patriotic notion of tying himself to agents of his own nationality, if there are others who are better qualified to secure the business. We have some very valuable information in our possession about the efficiency of the various engineering agencies in China, and with all due recognition of the capability, enterprise and integrity of British engineers, we do not believe that any of them in China will withhold due credit from the leading German engineering concerns who have pioneered the field.

We have seen one of the largest German electrical manufacturers develop a business in China during the last eight years, from a tiny one room office on a side street, with one engineer employee, to its present enviable position where fifteen rooms cannot accommodate its Shanghai staff. It now has its own branches with resident engineers in all the principal ports, and secures a large share of the electrical business. We can personally testify to the fact that the one solitary engineer who came to Shanghai, over eight years ago, worked night and day, accepted any old contract, even unto wiring a house, and sold supplies in small orders; anything to make expenses. He was always on the job. He had no traditional social laws to determine who he should or should not associate with, nor did he make a fetish of sport. He advertised. He prospered. In a year an assistant was sent out; later on others arrived, and thus year by year by strict application to their own specialty, they built up perhaps the largest electrical business in China.

Other engineers criticise some of the original installations as being of poor quality, inefficient, and

all the other stock trade reflections on a competitor's work. Perhaps some of the criticisms are justified, but, on the other hand, the German engineer studied his customer, found out just how much he had to spend, and then sold him a plant for that amount of money. The installations might have been better, but would have cost more. This is business, despite all the arguments disgruntled competitors can advance to the contrary. We have yet to find the high minded machinery agent who will refuse to sell a customer a machine at the price he can afford to pay. There are many other examples of German application that have won out in China, and we could fill several pages about their methods that have come under our own observation.

As long ago as 1906, a very spirited journalistic controversy occurred in some of the leading London papers about the methods of British agents of British manufacturers in China, and some very severe strictures were passed on their slackness. Letters were quoted by "Commercial Intelligence" (Jan. 24, 1906) from important British firms, stating that their interests had been so hopelessly mismanaged that they had been compelied to cancel the agencies and transfer them to German firms. The same paper stated that it had ample evidence that British firms were dissatisfied with their British representation in the Far East, and that agencies were being cancelled and fresh arrangements made with firms who were not British. We felt at the time, that the fault was unjustly shouldered on to the China representatives, for we were convinced that in the majority of cases, the manufacturers were equally to blame by failing to make proper financial allowances for advertising and travelling expenses, and in expecting immediate returns from this highly competitive field. We refer to the above facts as an indication and proof that British manufacturers were quite willing at that time to condemn the methods of their own representatives and extol the virtues of the now loudly denounced Germans. So between the working of the official monopoly, and the inexperience of both manufacturers and their representatives, the British engineering manufacturers received few orders from China, and what they did receive, in many instances came through the enterprise of their German agents or, in other cases, through orders placed by German firms with British agents in China.

In another vitally important phase of the situation, the existence of the British financial monopoly acted as an insurmountable barrier to the expansion of independent British engineering trade, especially in the equipment of government plants and those belonging to semi-official industrial companies. This business naturally gravitated to the large German concerns in China, as they exerted special efforts to keep constantly in touch with the Chinese, and, when the time was ripe, they were ready with financial arrangements and terms acceptable to the Chinese officials. Many of these transactions took the form of a loan agreement to furnish the funds for the purchase of the plant, with stipulations that so much should be expended in materials and supplies. In some instances perhaps the amount of the loan was much higher than the value of the plant, and the surplus was expended by the authorities without any questions or restrictions. As long as the security is ample, no merchant or independent bank will lose good business by insisting on dictating terms as to the expenditure of the excess funds.

The British government in its altruistic policy to save China from herself, and by refusing to admit that her officials could be entrusted to honestly handle loan funds, so as to preserve the field for its pet monopoly, has always frowned down any tendency towards the establishment of loan terms that would release China from the severe restrictions as to supervision of expenditures. The Germans, on the other hand, seeing that the harsh attitude of Britain and the official organization was distasteful to China, and a barrier to the successful prosecution of business and establishment of cordial relations, broke away from the leading strings of Great Britain and demonstrated their faith in the honesty of the Chinese, by conceding them a greater freedom in the expenditure of the funds. The signing of the "Pukow" terms was a severe blow to British policy, and has always been resented as a German trick to curry favor with the Chinese. It was this faith and trust in their integrity, and the disposition to set aside terms obnoxious to Chinese pride and inimical to China's administrative independence, that enabled Germany to secure their confidence. To the apologists for British policy, any relaxation in loan terms, which might indicate that China was competent and honest enough to handle and expend loan funds, and thus hasten the day of her release from foreign financial supervision, the German demonstration of trust in China's credit and good faith, is denounced as a scurvy German trick. But if this matter is closely analyzed, it is clearly seen that as long as Britain demands certain terms considered by her as indispensable for the proper safeguarding of the funds, and then refuses to admit any competition, China can never escape from these terms so humiliating to her pride, and so fraught with danger to her independence. Other equally patriotic British firms might have entertained different ideas as to the terms they would be willing to concede to a Government whose bonds were at that time quoted at par, but they were barred out of the field. The British Government in conceding the full strength of its support to its official financial institution has endeavoured to establish certain conditions under which China shall be permitted to conduct business, and is apparently determined that not only its own people but all the rest of the world shall bow to her dictates on this matter. If the independent bankers of Germany, America, France or other countries hold different views about China's honesty and ability to pay her debts, and are willing to concede more favorable terms as a basis on which to secure business, we do not see how it can be construed otherwise than strictly legitimate. If other competitors have full knowledge of and are satisfied that Chinese officials bitterly resent the attitude of Great Britain, (and this statement is true, despite all assurances to the contrary) and that their only hope to successfully compete is by offering terms more in accord with Chinese pride, can they be accused of trickiness or

unscrupulousness if they fail to see eye to eye with Britain? The British Government cannot expect all the rest of the world to acquiesce in the wisdom of its policy, especially when it operates for the benefit of one particular corporation. It savors too much of a set scheme for the ultimate ascendency of this organization in the control of China's financial affairs.

With all other British financial institutions barred from accepting Chinese loans, how could their engineering firms in China, hope to finance contracts for the equipment of large Government arsenals and industrial plants? There was only one important British engineering firm in China with sufficient financial strength to successfully undertake such large contracts, and that was the partner of the Bank in railway construction. The only other British bank operating in China, confined itself to a strictly commercial business. So it is again evident that even if the Chinese were disposed to equip these plants with British machinery, about the only concern in China who could successfully finance the order without assistance from the official Bank, was the other partner in the monopoly.

The Chinese know exactly what terms would be demanded if they approached a British firm to undertake any large government contract that implied the signing of a loan agreement. They therefore acted true to human nature the world over, and did what any other sensible person would do under like circumstances. They approached those who were not chained down by the strict provisions of the official monopoly, and who could readily obtain financial support from the official German Banks in China or from other institutions at Home. Thus it was that the leading German firms were enabled to capture a profitable business, that might have gone to British manufacturers, if it had not been for the solicitude of the British Government to protect the Chinese from their own shortcomings, ostensibly for the protection of British bondholders in general, but in its effect for the perpetuation of a monopoly to its official institution. The British agents of engineering manufacturers in China bereft of proper banking facilities, and with little or no financial support from the manufacturers, were limited to a circumscribed sphere of activity in the immediate vicinity of their offices in Shanghai, and could not afford to get out and cover the vast country in a proper way. On the other hand, the great German firms could readily obtain all the financial assistance necessary from their banks on their own indorsement. This enabled them to negotiate with the Chinese for any small industrial loan for the purchase of plant and machinery. This circuitous method of raising funds is naturally more expensive than a direct Government transaction with the official banks where the national credit is pledged as security. But the Chinese were willing to pay the higher rate of interest and accept those exceptional terms which must always rule where the risks are so great as in a provincial or municipal loan in China which lacks the Central Government guarantee.

In their rigid adherence to certain principles the foreign Governments and the official institutions have viewed with marked disfavor any direct provincial or municipal loan in China, whereby independent financiers might break through the ringed fence of monopoly and create terms opposed to their ideas of financial supervision. Only by a strong centralized government having absolute control over the credit of provinces and cities, can the monopoly be upheld and the "indispensable" terms perpetuated. And to this tendency to maintain at all hazards the centralization of power at Peking, for the facilitation of forging the financial chains on China's independence, is traceable the gradual disappearance of those republican principles created by the overthrow of the Manchus, and the recrudescence of those despotic methods having for their ultimate purpose the recreation of an autocracy. And the unsuspicious, trusting and inexperienced officials at Peking, attracted by the lure of gold, are enmeshed and vainly struggling in the web of political finance, pending the hour of their certain doom.

The price will be dearly paid by China for the mistakes of the last few years, and we repeat again, had it not been for the war in Europe, and had China persisted in borrowing another large administrative loan, her financial independence would have gone the way of her leased ports and the Maritime Customs. It would all have been done so correctly, so sympathetically and in such strict conformance with the customary rules of the game that the world would have looked on and cordially approved of the generous and altruistic motives advanced by the most exalted and most Christian Powers leagued with Japan, to cover up their schemes of expansion. The inexorable laws of modern political finance and the tremendous pressure of expanding industrial enterprise, and the lust for Empire, applied to a weak and defenseless nation like China, can have only one result.

It will be readily perceived that during all the years that the British financial monopoly was rigidly enforced, and provincial and municipal loans banned as contrary to the spirit of that monopoly, it was absolutely impossible for British firms to compete for the equipment of Chinese Government enterprises controlled by the Provincial Viceroys and Governors. As the German firms were in a position to obtain the necessary financial backing to negotiate these small loans, they secured the business. As to the ethics involved in these special transactions, all we have to say is that if British firms had been accorded the same facilities by their Government and had participated to any extent in the rich profits from this class of business, the world would have heard very little about the immorality of German methods. For we assert that there is no perceptible difference in the commercial ethics of British traders and those of other nationalities as applied to China, and they cannot be accused of refusing to make profits, from any altruistic conception of the inexperience of the customer, or from any adherence to an inflexible code of loan ethics advocated by their Government. They failed to get all the Chinese provincial engineering business. The Germans succeeded, that is all there is to it, and it devolves upon the British traducers of German and American methods, to stop throwing mud, and indulging in recriminations,

and instead firmly demand an explanation from their own Government why they were excluded from the field.

Having fully described the reasons for the creation of the monopoly, with logical and honest deductions as to its ultimate ends, and its effect on the independent British financiers, constructors, manufacturers and their representatives in China, it is only fair to state that the British Government has recently been moved to modify its fixed policy of sixteen years' standing, and is now disposed to permit a freer competition in the hitherto closed preserve of Chinese finance and railway construction. The stirring of its conscience however came too late to undo the damage, and check the growth of bitter feelings engendered between England and Germany. The fact that it did exist for so long gave rise to certain erroneous impressions amongst the uninformed in England, and provided the excuse for the virulent campaign of abuse and misrepresentation directed against Germany and America, which in turn is largely responsible for the present exhibition of savage hate between the two principal antagonists of the great struggle.

It is possible that we may err in some of our deductions. We sincerely hope that we are wrong. But that our facts are accurate, and our conclusions are logical and honest, are beyond dispute, and cannot be challenged. We hold no rancor, nor are we inspired by any motive other than one to have the truth laid bare, so Americans and Britons will have their eyes fully opened and take the necessary precautions in time to avert the inevitable rupture in friendly relations if the campaign we are about to expose is not squashed with a firm hand.

While the monopoly was in full force, and British manufacturers were wondering why they failed to secure a foothold in China, a little monthly engineering trade journal was launched in London for the purpose of furthering British engineering interests in China. Out of this small and insignificant beginning has developed the campaign which now demands the total annihilation of the German people with a vindictiveness and ferocity which harks us back to the Dark Ages. Appealing to the British manufacturer's intense patriotism, and representing German methods and American competition as the reason for the failure of British engineers in China, and presenting other plausible and misleading arguments, this archtype of greed and unscrupulousness secured a sympathetic audience amongst dissatisfied and uninformed manufacturers. They listened to his misrepresentations and mistook his activities for true patriotism. He urged upon them the necessity of co-operation and when success was assured and the organization effected, he was rewarded by being appointed to the position of its Secretary. The story of his patriotic activities from that date can be read between the lines of the official and confidential circulars of the association, and the monthly paper whose policy he inspires, but the story of the damage he has done to British prestige, of the undying hate he generated in the breasts of friendly German merchants, and the resentment against Great Britain by her French friends, and the loss of respect amongst Americans can only be ascertained and appreciated by a careful analysis of his work as herewith presented. With his promotion to the Secretaryship of this Association, commenced that extraordinary outpouring of pseudo righteous British indignation against the German "blight." To add insult to injury, the British Government itself was misled into officially recognizing and approving of this undignified campaign. From that date every German became honestly convinced that a determined attack was to be made on their trade, and their commerce in China annihilated, under a well directed movement officially approved of by the British Government. For the last two years the flow of misrepresentation and abuse has poured steadily from the columns of the paper whose policy faithfully reflects the thoughts of the Secretary of the British official organization, until the mere sight of, or very mention of its name to the Germans is like waving a red flag before a bull.

Human nature is the same the world over, and if similar abuse and insult had been heaped on Americans, with the indirect approval of the British Government, all the ties of blood or a common civilization could never have stifled the howl of indignation from an outraged and misrepresented people. When, to cap the climax, in May last, the British Foreign Office interfered with the right of the Chinese Government to administer its own affairs, and reverted to the spheres of influence in the matter of the International Construction Company, which denied the right of Germany and America to participate in the financing and construction of railways in the Yangtsze Valley, and when Sir Edward Grey obliquely indorsed this policy in his speech in the House of Commons on July 10th, ulto., is it any wonder that the German Government, taking advantage of the murder of the Austrian Archduke, decided that it was no use to postpone the issue, and that the hour to strike had arrived? We do not pretend to say that this statement is true to facts, but that it had a powerful bearing on the state of feeling in Germany, we are positive.

We can now analyze the activities of the formidable British Engineers' Association, whose founder and Secretary is largely responsible for the creation of this wave of hatred against Britain in Germany, the feeling of distrust in France and the loss of respect for Britain amongst Americans.

THE BRITISH ENGINEERS' ASSOCIATION

In 1912 there was organized in London a combination of British manufacturing engineers under the corporate title of the British Engineers' Association, whose prime object was the advancement of British engineering practice abroad, with special reference to China. The aims of the Association as set forth in its propaganda literature, and the success claimed for its work in China after two years of existence, have such a far reaching effect on the trade of other countries and bearing on certain important questions relating to the maintenance of the Open Door, and the position of America, that it is our duty to place before our readers some pertinent facts connected with its policy and propaganda. In order to avoid all misunderstanding we present herewith in the form of an appendix the official circular of the association for 1913, as well as certain articles which have appeared in inspired British papers, on which our deductions are based.

We have followed with close interest the reported development of the campaign carried on in China for the advancement of the special objects of this Association, and have carefully read and preserved all records about its work and plans published in British newspapers, especially such articles as have appeared from time to time in the columns of "Eastern Engineering" a monthly trade paper which faithfully reflects the policy of the Association. As the motives of the Association and those which guide the above mentioned trade journal, have so much in common, a reference to the policy of "Eastern Engineering" is necessary for a full understanding of the following arguments.

"Eastern Engineering" was founded in 1910 by Mr. Stafford Ransome, a journalist of undoubted ability, and a competent authority on certain phases of Far Eastern affairs. The keynote of his editorial policy and bid for support rested solely on an appeal to the intense national feelings of British manufacturers, and found expression in the standing notice carried in the Editorial heading of the paper announcing **"No Advertisements of Continental or American Manufacturers can be accepted on any terms."**

Mr. Ransome's journalistic energies were concentrated primarily on an alleged exposure of German trade methods and competition which he openly characterized as the German "blight," *to be exterminated at any cost.* After Germany, the American manufacturers and their reputed success in China came in for his denunciation and criticism. It is quite evident that a purely national organ, appealing to the existing national jealousy against Germany, with the British flag nailed firmly to the mast, and whose policy was a constant insult to Germans and their business methods, and an exhibition of journalistic spleen against all manufacturers other than British, could not hope to be a complete success in the complex international trading community residing in China, where the paper was expected to carry weight and influence. Many important British engineering manufacturers have for years entrusted their interests in China to German firms; many German manufacturers were likewise represented by British traders and both German and British firms in China efficiently and faithfully acted as the agents of American manufacturers. Owing to the existence of national monopolies and the slow development of industries and railways in China, manufacturers of all countries finding the business did not warrant the maintenance of their own offices or representatives were satisfied to entrust their interests to those trading firms already firmly established, whose financial standing guaranteed the payment of the orders secured. The situation from a national viewpoint was far from being ideal, but the manufacturers if dissatisfied with the agent always had the option of establishing their direct branch offices. In other words, commerce, especially in the engineering branches, was conducted in China as fitted the exigencies of the existing conditions with more or less harmony between manufacturers at home and their agents. It is obvious that trading concerns of the same nationality as the manufacturers they represent, should preferably be entrusted with pushing their mutual national interests, but where this is not always possible, there is no other remedy but to arrange an agreement with the firm best equipped to get the business, regardless of nationality.

The campaign against German and American competition and the attacks on their methods naturally engendered intense national feeling and animosities, especially amongst the many reputable and enterprising German firms who were large dealers in British goods. A feeling of resentment was born which has steadily developed into open expressions of national hate. There is no surer way of intensifying national hatreds than by the injudicious employment of newspaper invectives, and most modern wars can be traced ultimately to the gross partiality of inspired national organs.

It is an axiom with all honest merchants that lasting trade cannot be built up by discrediting the wares of the competitor Successful business is based on the intrinsic superiority of the products offered for sale, except where cheapness is the essential quality. If goods lack merit, no amount of persuasion can secure repeat orders. The merchant or salesman who relies on defaming the character, methods and wares of his competitor, instead of demonstrating the superior quality of his own, cannot hope for permanent success. And so with Nations and National Associations. Characterizing German trade methods as the German "blight" to be exterminated at any cost is no inducement for Chinese and other purchasers to patronize British manufacturers, nor is it conducive to perpetuating cordial trade relations with other large and important nations who freely purchase British goods. If the German "blight" is obliterated, we may reasonably expect that once their threatening competition is killed, the epithet of "blighters" will be extended to the next formidable competitors, who in the mind of "Eastern Engineering" are the Americans.

The policy of "Eastern Engineering" finds partial expression in the following extract from an editorial in the June, 1912, issue.

> "At the present day, or rather, just before the revolution, China was worth as a recipient of machinery, metals, other engineering plant and engineering accessories, something like £8,000,000 annually. Of this some 40 per cent fell to the share of British firms. *That is not enough*, and it is not nearly what it would be but for the fact that our manufacturers are handicapped by a network of unfair conditions."
>
> "To begin with China has been mortgaging her financial soul to our competitors and when the bankers of other nations lend her money they have invariably coupled their accommodation with stipulations which have told in favor of their own manufacturers. When British financiers lend money to China they ignore the interests of the engineering firms entirely, and as often as not any plant purchased with the money thus lent is ordered from our foreign competitors. If the British Engineers' Association can affect alteration in this iniquitous class of transaction it will have justified its existence on that ground alone."

This last misleading statement indicates the intense patriotic program of Mr. Ransome. He admits that the British share of China's engineering imports in 1911 was 40 per cent of the total, but holds that it is not enough. In view of other national activities and interests in China, the impartial critic would say that Great Britain's share was rather more than a fair percentage of the total, and Mr. Ransome's comment would indicate that he held the view so often advanced against a certain type of Britisher, that he wanted to "hog it all" for Britain. A surely worthy and patriotic feeling, but rather indifferent to the legitimate aspirations of those other than British who also look for a fair share of the great Chinese market under the established laws of free competition. Mr. Ransome's ideas found ready listeners. Out of an article in "Eastern Engineering" sprang the germ for the creation

of a strong British Engineers' Association for the furtherance of their interests in China. The idea was received with approval and adopted by some of the largest engineering concerns. Mr. Ransome took a very active part in the preliminary propaganda work and organization of the Association and was rewarded with the position of active Secretary of the incorporated body. In relinquishing the management and editorship of "Eastern Engineering" to assume his new duties, the journal editorially announced that although he would take no further active part in the management of the paper, there would be no change from the policy he had initiated. Mr. Ransome has no further active official connection with "Eastern Engineering," the paper is very emphatic on this point, in fact very touchy, but the evidence is irrefutable that his policy still directs its work, and he personally directs the work of the Association. In establishing the connection between "Eastern Engineering" and the British Engineers' Association we cannot be accused of distorting facts, as our only sources of information are the printed statements of the journal itself. The following facts extracted from the pages of the journal are not without their significance.

Mr. Stafford Ransome, until he became Secretary of the British Engineers' Association, was the founder of and managed and edited the two journals, "Eastern Engineering" and "African Engineering." They were created exclusively for the furtherance of the interests of the British manufacturing engineer, even to the exclusion of foreign advertising and rejection of German subscriptions. The ownership of these papers was vested in a limited liability company styled the British Press, Ltd., in which Sir William Porter and a Mr. Brindley appeared as Proprietors and shareholders. As Mr. Ransome was the founder, manager and editor it is fair to assume that he was also a shareholder. The original idea for the formation of the British Engineers' Association sprang from the brain of Mr. Ransome, and the Association makes formal and due acknowledgment of the great services rendered by the above named gentleman, and rewards him with the position of its permanent Secretary.

"Eastern Engineering" is very emphatic in asserting that there is no connection whatever between it and the British Engineers' Association, and that no one holding interests in the one concern holds any interest whatever in the other. We have no desire to press the point, but as Mr. Ransome is only a salaried secretary or employee of the association, he of course does not hold any interest in it. He might still hold his interest in "Eastern Engineering" and the above statement would be technically correct. We can also be fair and take it that Mr. Ransome has disposed of any shares he may have held in the British Press, Ltd. It cannot alter the situation.

It is clear, however, that as long as the British Engineers' Association retains his services as its active secretary, in charge of all its correspondence and propaganda work, there will always exist a very strong link which binds it to "Eastern Engineering," which openly declares that Mr. Ransome's policy still guides its work. There may be no technical financial connection, but a community of interests and policy will exist as long as the creator of the joint enterprises manages the operations of the Association. I have endeavored to establish and emphasize this connection as on it hinges to a large extent the corporate honor of the Association itself, as the following facts will amply prove. Some one blundered and has brought upon the Association as a whole a most serious charge, from which it can only escape with dignity and honor by fixing the responsibility upon the person or persons guilty of holding them up to judgment.

We can now proceed to a careful study of the objects of the Association, the means by which they are obtained and a frank discussion of the ethics involved. We hope to prove that although the aims of the Association are worthy and legitimate, the tactics officially adopted to gain their ends are open to honest criticism as being unworthy of a great and powerful organization operating under official approval and support. To avoid the faintest charge of misrepresentation or unfairness we append to this all references. With these before us we can now proceed to analyze and discuss the points we desire to accentuate.

The first and most significant item that strikes the eye and one which later on in the discussion assumes the greatest importance, is the official list of the Honorary Members of the Association. At the foot of the roll of eminent Britishers who have contributed to the advance of their country's prestige in China, appears the well known name of Dr. George Ernest Morrison, newly appointed Adviser to the Chinese Government. In referring to the previous literature of the Association, and to the printed reports of speeches, it is found that the name of Dr. Morrison as the Adviser to the Chinese Government was on various occasions publicly mentioned as an Honorary Member of the Association. The latest official circular of the Association dated January, 1914, still bears the name in the list of Honorary Members. In a speech delivered by Sir Walter Hillier, the predecessor to Dr. Morrison as Adviser to the Chinese Government and a personal friend of the latter, at the Inaugural Dinner of the Association held at the Hotel Metropole in London on December 3rd, 1912, special reference was made to Dr. Morrison in the following terms: "Dr. Morrison, an Honorary Member of this Association, perhaps a still greater authority, maintains that China is already regenerated." Here we have not only the official record of the Association but a direct reference by Sir Walter Hillier that Dr. Morrison, the Adviser to the Chinese Government was an Honorary Member of the British Engineers' Association, which identifies him with all their objects and implies that he is in cordial sympathy with their program. Are we justified in inferring from this connection, that Dr. Morrison must necessarily employ his high position and influence to promote the special objects of the Association with the Chinese Government?

Otherwise why should his membership be solicited to an engineering association, and his name spoken of in official meetings and published in official circulars. Dr. Morrison is a physician and a journalist, he is not an engineer. In what manner then could Dr. Morrison promote the objects of the Association except through the influence of his position as Adviser to the Chinese Government, which to those on the ground means the Confidential Adviser to the President and the circle of immediate officials who control the Government. Dr. Morrison's position is one quite distinct from all other advisers. The utmost secrecy attaches to his work with the President. His value to the Chinese depends on maintaining his reports secret. His influence with the President and the Cabinet is undeniably great. The value of his advice to the Chinese Government rests solely on its sincerity and disinterestedness. As an honorable gentleman his duty to the Chinese is to give them counsel, free from any taint of national prejudice. Otherwise his services are worthless to the Chinese, and all other nations have just grounds on which to vigorously protest against his retention in such an office. The mere fact that Dr. George Ernest Morrisons' name is included in the list of Honorary Members of the British Engineer's Association, while he is actively holding the trusted position of confidential adviser to the Chinese Government is in itself an accusation of interested motives which, if true, would disqualify him for the position. All nations other than British would have an undeniable right to demand his immediate dismissal from the post as his activities and sympathies must perforce be a menace to their legitimate aspirations to participate equally in the development of China.

In some quarters Dr. Morrison's reputation has already received a blow from this published connection. Is it fair for American manufacturers (and those of all other nations) to look on Dr. Morrison as the special instrument for advancing the objects of the Association with the High Authorities at Peking? Is it unjust for those whose interests are jeopardized, to ask if it is through Dr. Morrison's influence that the Association is to advance its special objects to have all American and German engineering advisers to the Chinese Government replaced by Englishmen, and to bring the necessary pressure to bear on the Chinese for the adoption of British engineering standards and specifications to the exclusion of all others? Is it through Dr. Morrison's intimate knowledge of what goes on behind the scenes in official China, that the Association is to receive the advance information to enable them to forestall all competitors, in fact is it unfair that others should see in him the one great instrument of the Association to assist them in their schemes?

If the Association has employed Dr. Morrison's name without his permission then they are guilty of destroying his reputation and usefulness, and he has a legal right to demand heavy damages in compensation. We understand that Dr. Morrison has stated that the Association used his name without his permission. If true, he has been deeply wronged, and no public apology can adequately wipe out the impression that has been created amongst many who may never read or hear of the correction.

So far we have dealt with that phase of the matter which concerns the Association and Dr. Morrison. We will now turn to the pages of "Eastern Engineering," whose policy is dominated by the Secretary of the British Engineers' Association. We have already established the connection existing between the Association and the journal. The Secretary of the Association is admittedly responsible for the editorial policy of the paper in question. In view of the intimate confidential relations which must exist between him and his former assistant who is now editor, it is fair to assume that any editorial reference appearing in "Eastern Engineering" concerning the work and policy of the Association must be authoritative. Under the title of "The Rapid Progress of the British Engineering Association" there appeared a leading editorial in the issue for June, 1913. In the course of this article appears the following significant sentence:

"But apart from the influence of its members, the Association has been extremely fortunate in possessing as its Honorary Members and ADVISERS men like Sir Walter Hillier and Dr. Morrison, the late and present advisers to the Chinese Government respectively."

Here we have a semi-official announcement through the inspired "Eastern Engineering" that Dr. Morrison in addition to being an Honorary Member, is also an ADVISER to the British Engineers' Association while he is actively holding the position of Adviser to the Chinese Government. Despite all disclaimers to the contrary, all information published by "Eastern Engineering" concerning the work of the Association, must be considered as authoritative. With all the facts before us, the impartial critic is justified in accepting it as official. So here we have an official and authoritative admission that Dr. Morrison, the present Adviser to the Chinese Government, is also an Adviser to the British Engineers' Association, thus firmly identifying him with the objects and campaign of the Association in China and with all that such advisership implies and signifies. In brief, is it fair to infer from this admission that the actions of the Association are guided by the undeniably valuable advice of its adviser? The editor of "Eastern Engineering" has apparently laid himself open to prosecution for libel.

The official use of Dr. Morrison's name as an Honorary Member of the Association at the time he is holding the position of Confidential Adviser to the Chinese Government in itself was sufficient to undermine his usefulness, but in the coupling of his name in the capacity of Adviser to the Association and Adviser to the Government at the same time and in the same sentence, those responsible for such a libel, have done him a grievous wrong. A further study of the aims and objects of the Association will make it clear why in the face of these statements it would be impossible for Dr. Morrison to retain his post and continue to enjoy the trust and confidence of other nations and the Chinese, if they were true.*

There can be no just criticisms on the general plans of the Association for the purely legitimate advancement of British Engineering principles in China, but an examination of the objects as revealed in the official circular and in speeches expose certain aims which every other nation has a right to protect itself against, in whatever manner it may see fit.

In the first place it is announced that the Association received the formal recognition of the Foreign Office on December 20th, 1912, and its status was recognized by the Chinese authorities. In other words the Chinese Government recognizes that the Association is official in character, which gives a decided advantage to the Agents of the Association in its dealings with Chinese officials. The Members are informed that the British Minister in Peking has been instructed by the Secretary of State for Foreign Affairs to give his official support to the Members of the Association who may be travelling in China, and to instruct the British Consuls throughout China to do the same. Is it unfair to assume that the Chinese officials who are not deeply informed as to the nice distinctions between official support and a purely Government bureau, should incline to the belief that the Association is some kind of a Government Department and its agents regularly accredited commercial attaches to the British diplomatic service in China. Close analysis will reveal that there is no distinction between the agents of the British Government, and the agents of an official organization having the full approval and support of the Government. A further perusal of the official circular in that part outlining the duties of the Resident Commissioner of the Association in Peking, reveals that one of his most important functions is to make full use of the fact that the Association is formally recognized by the Foreign Office. Still further on in the circular in describing the benefits arising from membership in the Association, the inducement is held forth that as the Association has the official recognition of the Foreign Office, it can obtain for its Members the support of the British diplomatic and consular officers throughout China. And we may add, that reading between the lines, and making a reasonable interpretation of the circular, this also conveys the idea, that as the official status of the Association has been recognized by the Chinese authorities, the inducement may also read that the Members can rely on receiving a most cordial reception from the latter, especially as they are all vouched for by the British Minister and the British Consuls throughout China.

The facts plainly set forth in the official literature of the Association therefore admit of only one interpretation and clearly identify the British Foreign Office, the British Legation at Peking and the British Consulates throughout China in addition to the British Confidential Adviser to the Chinese Government with all the aims, objects and aspirations of the Association and its propaganda. The manufacturers of all other nations have the right to believe therefore that the Association is official and works in co-operation with the British Government. We fail however to see the names of any high active officials of the British Government on the lists of Honorary or other membership, although a representative of the Foreign Office was present at the Inaugural Dinner. In the words of the President of the Association, it was not deemed prudent to ask this representative to say anything, as the Foreign Office did not wish him to say much. This scrupulous and exact attitude for the dignity of the British Government officials, is clear indication that the leaders of the Association had a fine appreciation of the ethics involved in coupling the name of any active British official with the work of the Association. This regard for the British diplomatic officers stands in striking contrast with the open use and abuse of the name and reputation of the Honorary Member who holds the important and delicate position of Adviser to the Chinese Government, especially as China was the country selected as the sphere of its immediate activity.

* We have received copies of the Official Circulars of the British Engineers' Association, dated October, 1913, and January, 1914. Our attention is directed to the fact, that in both these circulars, the Association has left nothing to the imagination as to the connection of Dr. Morrison with its campaign. On Page 22 of the October, 1913, circular, is found the official announcement that the Association is fortunate in having *seven* of the most eminent living authorities on China as Honorary Members and Advisers, and refers the reader to page 7 of the circular for their names. Reference to Page 7 discloses the names of seven, in which is included the name of Dr. Morrison, Adviser to the Chin se Government!

In the January, 1914, circular, the same statement is made but the names of *eight* Honorary Members and Advisers are referred to on page seven. Reference to this page again discloses the name of Dr. Morrison on the list of eight.

In other words, since the publication of the official information in the June, 1913, issue of "Eastern Engineering," the Association has itself officially classified the Adviser to the Chinese Government as an Adviser of the Association, thus firmly identifying Dr. Morrison with all their objects, and as one of their prime movers.

We are also in receipt of the inform ation that the Secretary ofthe Association has gone a step further and in the confidential bulletinsfor circulation amongst the members of the Association, he has led them to believe that Dr. Morrison was the main support of their Resident Commissioner at Peking for the advancement of their propaganda.

With a clear conception of the objects of the Association and the methods employed to attain success, with all that the official recognition of the British Government implies and signifies, with the logical inference which honestly can be drawn from the connection with the Adviser to the Chinese Government, and after a careful digestion of all the facts, can the honest and impartial critic be censured if he fails to distinguish any ethical difference between the methods employed by the British official Association and that of the much denounced German scheme for the furtherance of their foreign trade, only the latter went a step further and openly advocated the use of large sums for publicity purposes. The ends were the same, and apparently the end justifies the means in both instances, without inquiring too closely into the morals and ethics involved.

The only material difference seems to be that the German Foreign Office contributed the entire secret service fund of £12,500 per annum to the war chest of the German Association organized for the furtherance of German industrial prestige abroad. Of this, we will treat later on. For the present the fact is established that the British Government contributed the full weight of its official support to the British Association. The British Minister at Peking and the British Consuls throughout China were instructed to recognize the Association as official, and extend to it every support in its work, and the Resident Commissioner of the Association in China was instructed to make full use of this fact, and on the other hand it was held out as an inducement to secure the adherence of new Members, by the officers of the Association in their propaganda work in Great Britain. Although the British Government refrained from contributing hard cash to the campaign fund of its national organization, it did extend its unqualified moral and active support. It is not difficult to capitalize official support of this kind. In effect, it was more valuable to the work of the Association than an actual cash contribution, and it is clear that the Association fully appreciated this point by their advertisement of the support and the instructions to its Commissioner in China. Is it unreasonable to deduce from this, that new members were persuaded to join the association by emphasizing the official connection with the Government? We have heard of official support being employed in similar ways.

As new Members paid the initiation fees and annual dues, and became liable for such calls as might be made on them for special contributions, did not the official support of the British Government have a most important and distinct bearing on the finances of the Association? Or is it unreasonable to suppose, that this official support was employed as a club to compel reluctant members to join? For it is evident that if only Members of the Association were to receive official recognition, letters of introduction and credentials to high Chinese officials, and the assistance of the Agents in China, by the same token those manufacturers who preferred to do business in China independent of the Association, would be looked on as rank traitors and outsiders, and be refused all these advantages arising from official support, and be compelled to "paddle their own canoe." We are therefore compelled to believe that the official support tendered to the Association and its work, was equivalent to an actual cash subscription in its effects, and it can be and has been capitalized to the full in the furtherance of its designs.

While we are discussing the ethics and morality of official support in the form of cash, we may admit that we see no harm in this when the objects are the advancement of the national interests, as all Governments have funds for these worthy purposes, which do not always appear on the surface. The German Government was "caught in the act" and the gross immorality of subsidizing foreign newspapers and purchasing publicity to advance German interests shocked the finer sensibilities of the British. How much money have other nations expended in publicity work of this nature? "The Times" is a standing reminder to British readers, that special Supplements devoted to advancing the commercial interests of various countries, and paid for by official and private contributions, are not unknown in England. Has not Germany the right to purchase publicity in papers throughout the world for the same purpose? What was the object of the great Japanese Special Edition of "The Times," and the many Russian and other Supplements which have appeared from time to time in connection with this same paper? If "The Times" had not guaranteed to publish the articles in a favorable light for advertisement and furtherance of Japanese and Russian interests would the latter have paid the cost of the work? If the leading exponent of British opinion can find no harm and retain a clear conscience for selling its space for the advancement of other foreign interests, how can Germany be accused of immorality when she plans to do the same thing on a larger scale? All newspapers have space for sale either in the shape of special editions, supplements or reading notices, and as long as the editorial opinion is not bartered away, it is part of a newspaper's business and a source of legitimate revenue. You cannot apply one principle and code of ethics in England and deny to Germany or other nations the same privilegey.

This all leads us up to the next phase of the work of the British Engineers' Association, and permits some pertinent questions as to the morality of the British program. At the Inaugural Dinner of the British Engineers' Association, Sir Charles Dudgeon, one of its Honorary Members, made the following significant remark in the course of his speech; "**Money, of course, would be required. The Association must have its own agents to exploit the field, and in so vast a field they would need many agents. But it was not only for the salaries and travelling expenses of those Agents that money would be required.** TO GET BEHIND THE SCENES IN OFFICIAL CHINA WAS AN EXPENSIVE MATTER **and it was essential that the representatives of this Association should know everything that there was to know.**"

Many constructions can be placed on this appeal, and in view of the high standing of the speaker we are content to accept it as referring to legitimate expenditures. But if analyzed in cold blood, what does it signify?

Can the impartial reader be accused of bias if he reads into these words, a suggestion of bribery? If it is an expensive matter to get behind the scenes in official China, and it is essential that the representatives of the Association should know everything there was to know, how otherwise can this be interpreted, than as it reads? All legitimate official information can be readily obtained in regard to contracts, by waiting until such time as tenders are announced, when all competitors will have an equal opportunity. Any attempt to obtain this information in advance by the expenditure of money, for the benefit of the British Engineers' Association is not only immoral and unfair, but a transgression on the rights of others. Only by the bribery of Chinese officials can the Association be kept accurately informed as to all there is to know. Does the British Engineers' Association approve of methods loudly denounced by its organizers and by the British press as peculiar to the Germans, by openly advocating that a bribery or corruption fund is essential to get behind the scenes? We are fully conversant with the prevailing methods of getting on the inside in China as practiced by certain firms and national interests, and to our experienced eye, this can only be construed in one manner.

Are we justified then in assuming that a fund is available for getting behind the scenes in official China? Is it unduly stretching our imagination if we ask if the Political Adviser to the Chinese Government who is also an Honorary Member and alleged Adviser to the Association is the medium through which it hoped to be kept informed in advance of everything that there was to know? Are we justified in assuming that the British Foreign Office the Minister at Peking, and the Consular officials throughout China, who are identified with its work, are cognizant of and approve of the suggestion conveyed in the words of Sir Charles Dudgeon? Mr. Alston, of the Foreign Office, represented the Government at the Inaugural Dinner and must have heard the speech.

Such a thought is, however, preposterous. Yet we maintain in all seriousness that other critics not so friendly would not hesitate to couple these facts together, in the same manner that the British Press throughout the world have unanimously condemned the participation of the German Foreign Office in the scheme of its national organization for furthering German trade abroad.

The Association does not carry on trade or make profits. It is not a commercial body. Its objects are to advance the collective interests of all its members. In reality, therefore, it is a Missionary Society to educate the Chinese to adopt British engineering principles and purchase British machinery, particularly the products of its Members. Why then, may it be asked, are so many agents required to cover the field? How is the money to be expended to carry out this campaign of education? The only legitimate way to attain this end is through schools, colleges and publicity. Agents preaching the gospel of British superior methods cannot hope to make any lasting impression on the mind of the Chinese purchasers of machinery, unless supported by reading matter either in the shape of special pamphlets or the columns of friendly or subsidized newspapers. Let us suppose that an Agent of the Association succeeds in convincing those behind the scenes of the superiority of British principles for any specific purpose. The unsupported claim of superiority is not sufficient. It must be upheld by first cost and efficiency under given conditions. In China, first cost and long credit are usually the tests of superiority. If the agent is unable to quote prices and terms to the prospective Chinese customer, how can he convince him that British goods are the best? If he does quote prices, whose prices will it be? To be honest and fair to all the members of the Association he must be able to quote all the prices of all those who compete with each other. Otherwise his arguments cannot be convincing and lasting for the Chinese customer.

To be successful along these lines the agent must be fully prepared to quote prices on the spot and close the deal, thus carrying on a direct trade. Or, is it the intention of the Association that after all the missionary work has been done and the purchaser convinced and pronounced in his faith in British principles, that the information is to be sent home so that all members can get after the order. Obviously, the manufacturer who has an Agent in China will telegraph to him, and these favoured few will always secure the business, provided, that the German, American or other agent who may follow on the heels of the non-commercial missionary by being able to quote immediate prices and terms, does not obtain the coveted order. Unless the Agents of the Association have some connection with British commercial firms in China, who are on the spot and can quote immediate prices and terms, and strike while the iron is hot, it is difficult to see how their activities can produce practical results. If such connections should be established with British trading firms in China, it is again obvious that this would be unfair to those members not represented here. It is clear then that as the Association is not a commercial one, and not equipped or authorized to close a contract after having paved the way, we must seek for an explanation of their activities, and need of lots of money in some other quarter. Publicity? Yes, this would absorb lots of money, but as yet there is no evidence that money has been expended for this purpose in China. We are compelled to return to the suggestion implied in Sir Charles Dudgeon's speech as to the expensiveness of getting behind the scenes in official China. All of the objects of the Association are not clearly defined in the printed official circulars. To get behind the scenes of the Association one must also refer occasionally to those objects proclaimed in speeches to arouse interest and induce new members to join, and to refer to articles and editorials published in friendly British papers.

The Real Objects of the Association

At a meeting held at Birmingham on May 29th, 1913, in order to induce engineering firms of that city to join the Association, Mr. Douglas Vickers, its President, spoke some very plain truths about its scope and objects. In discussing the best way for British engineers to meet the competition of other countries, and the necessity for combined action, Mr. Vickers said:

"They would be able to urge their claims on Parliament; they would be able to get the support of the British Ministers in China for English manufacturing engineers in China, and other places abroad, and, further, **they would be able to press the British Government to use their best endeavors to get the Chinese Government to appoint to engineering posts Englishmen, rather than Germans or Americans. In that direction there was an immense amount to be done."**

"The real object of their competitors was to attack China in that way, by getting Germans or Americans as the case may be appointed as advisers and teachers to the Chinese, in order to bring up the Chinese engineer of the future with German and American text books; to get German and American ideas, and finally to work with German and American machines."

"There they thought their Association had a very good field for work. But in China the Association had another field open to it; that of preparing the Chinese Government for the reception of British manufacturers by bringing before them the fact there were great and good manufacturers in this country who could be trusted to supply the best goods the world could make. **They wanted their Commissioner to bring these facts always before the Chinese and get British Engineering Standards adopted."**

Here then is the "nigger in the wood pile," which explains much that has hitherto been obscure. To replace German and American engineering advisers and teachers by Englishmen; to secure the appointment of British advisers to new posts, and to influence the Chinese to officially adopt British engineering standards and specifications in their railways and other Government engineering and industrial works. These then are the real objects of this missionary association and are worth working for and expending large sums to get behind the scenes in Chinese official life. What would it not be worth to this Association to have the Chinese Government adopt officially the British engineering standards and specifications? Consider how much time and money is expended by the individual manufacturer to have his patent or specialty specified in a public tender, which freezes out all other competition and allows him to make his own price, and we begin to have some idea of the enormous benefit to British engineering manufacturers in general, if their standards are adopted as official by the Chinese Government and specified in all railway, bridge and other important engineering undertakings. **The success of this would mean that the Door of Equal Opportunity would be permanently closed to American and other Manufacturers, especially those of railway and bridge materials.** As there is little fundamental difference between British and Continental railway practice, the adoption of British standards would not debar them from a fair chance to compete, **but the real sufferers who would be driven from the Chinese market, would be the American manufacturers of locomotives, cars, bridges, structural steel, and other American specialties.** So the real aim of the British campaign can honestly be construed as a widespread official conspiracy to drive the formidable American competitor from China, and close the door on him so he can never hope to re-enter. Although from the British viewpoint, it is a very praiseworthy and patriotic action for the official association supported with all the power and prestige of the Government and with the alleged aid of the British Adviser to the Chinese Government, to do all in their power to attain their ends, we may be pardoned if we question the fairness and morality of it all to manufacturers of other nations. The FAR EASTERN REVIEW has steadily fought against great opposition for the principle of fair play and impartial drawing up of specifications for Chinese railway materials until we are disheartened that we will ever accomplish anything. We have persistently contended that the Chinese Government should appoint a commission to devise its own standard specifications in such a manner that the manufacturers of all nations would be placed on a more or less equal footing. But all the opposition to this seems to come entirely from European sources, who still persist in having their specifications adopted in spite of all efforts to secure Fair Play.

Is it fair for us to assume that this is the real underlying motive of this Association?

We are confirmed in our conviction that these are the real objects of the Association as evidenced by the fact that it is not a commercial body and has no authority to trade. Therefore it is a society for the accomplishment of certain specific ends outside of trade. A letter to the editor of "Eastern Engineering"

from the Secretary of the Association dated June 9th, 1913, clearly indicates that its objects are to facilitate and increase the business of British engineering firms by smoothing out some of those obstacles to their trade which cannot be overcome by the individual manufacturer. Reverting to the suggestion implied in the speech of Sir Charles Dudgeon that lots of money would be needed, and emphasizing the expensiveness of getting behind the scenes in official China, and that it was essential that the representatives of the Association should know all that there was to know, it is illuminating to carefully ponder over Article 9 of the Objects of the Association as set forth in its official circular; **"To aid by advice, co-operation, donations or otherwise any individual or concern who is able to promote the objects of this Association."**

Donations to whom? Chinese officials? We understand the Resident Commissioner in Peking has a considerable fund for entertaining purposes. This is legitimate enough, but what about DONATIONS to those who are able to aid the good work? How large a donation would be deemed advisable and appropriate for the well disposed Chinese official who could influence the adoption of British engineering standards and specifications on the Chinese Government railways? SOME donation! Is a donation available for those who can aid in securing the appointment of British Advisers to the Chinese Government? Has not the Association made it possible for the caustic critic to ask the pointed question: Does the Honorary Member and alleged Adviser of the Association indicate the needy officials worthy of receiving a donation in proportion to their ability to advance the special objects of the Association? Or is the word "donations" intended to cover the free equipment of colleges and schools with samples of British machinery and technical appliances and instruments? This legitimate avenue for distributing donations would seem to be covered by the provisions of Article 8. Perhaps Article 9 is merely a repetition of the preceding one and refers to legitimate donations in aid of colleges and schools, or assistance to purely British firms and individuals who would be rightly entitled to receive such aid in return for their patriotic work in advancing the interests of their country. How can we tell what to think? As it is not clearly specified, it leaves a broad construction to be placed on who shall or shall not be entitled to benefit through these donations. We have heard stories in China, of foreign Chinese Government engineers receiving a comfortable monthly allowance or "donation" from trading firms in return for having the specialties of the latter specified by name in public tenders for supplies. Is it fair to ask if something of the same nature is contemplated by the British Engineers' Association through their accredited agents in China, operating with the support of the British Government, and recognized as official by the Chinese authorities?

Appointment of British Advisers

To achieve the ultimate success of their propaganda, it is clear that the road will have to be carefully prepared by the suggestions and counsels of Advisers to the Chinese in engineering matters. At the very outset of the campaign, the Association becomes responsible for and openly indorses the questionable method of influencing the appointment of interested Advisers. This is in strong contrast with American methods in China. Every engineering Adviser selected by the Chinese authorities on the strength of the indorsement of the Association would undoubtedly enter upon his duties with the idea of advancing the interests of those who secured his appointment. The Chinese would accept his services with the feeling that they could rely on his sincerity and impartiality. In reality, they would be paying the salary of a high class expert working to advance the special interests of those instrumental in securing his appointment. In other words, the British program can be construed as encouraging professional men to act in conflict with the code of ethics adopted by all engineering societies throughout the world. It stands to reason that any candidate put forward by the Association for the position of Adviser to the Chinese Government on Technical or Engineering matters, will not receive support unless he has consented to advance the objects and aims of the Association. Therefore any adviser who may receive such an appointment through the agency of the Association must necessarily constitute a barrier to the legitimate rights of other nations to equitable treatment and a fair field for their share of the business. We are not going to labor this point. A campaign which endorses the subversion of professional ethics to advance national or special interests is open to the severest condemnation. The duties of the Resident Commissioner are openly set forth in the official circular as follows:

"To use his influence and that of the Association to secure as far as possible British Advisers and Instructors to the Chinese in Engineering Matters."

What has the Association accomplished to date in this great object? Their last Annual statement is not at hand, but an editorial headed "British Engineering in China" appearing in "The London & China Express" of September 4th, 1914, discloses some interesting information. Amongst other things it tells us that **the British Engineers' Association "is to be congratulated upon having succeeded in obtaining the appointment of a British Engineer as Mining Adviser to the Chinese Government and, we understand, is also endeavoring to secure other kindred appointments."**

So it is clear that the Association has not lost sight of its main objects. They have obtained the appointment of a Mining Adviser and are working to secure other kindred appointments.

THE GREAT OBJECTIVE

What is the great objective of the Association?

Where do they wish to establish exclusive British standards and specifications?

What is the most important field for their activity?

Where can the appointment of an Adviser in sympathy with their aims hope to secure lasting results?

The answer is clearly apparent.

It is only in the equipment of government railways that they can succeed in having British Engineering standards and specifications adopted, as all other openings for machinery are largely a matter of private initiative controlled by the individual option of the purchaser.

It is clear on analysis, that the adoption of British standards and specifications on the Chinese Government railways is the one great purpose of this official association. To achieve success and close the door to others, they must first influence the appointment of a British adviser to the Ministry of Communications.

If the American and other Governments refrain from taking an active interest in this matter, and the British official organization is successful in securing the appointment of their candidate to this post, what will be the ultimate effect on American engineering trade with China? Does not this whole campaign tend to oust American engineering materials, and influence the official adoption of British standards and specifications through the appointment of a British adviser to the Railway Board? Can it not be construed as a deliberate attempt on the part of the British manufacturers aided by the British Government, and supported by the alleged British Adviser to the Chinese Government to close the Door of Equal Opportunity to America?

What can America do to protect her manufacturers from the logical effects of this campaign so openly and strenuously waged, and preserve the market open for her manufacturers? American trade interests will be menaced, as it will be almost impossible to counteract the secret activities of this official Association. The official records of the Association indicate that money is available for advancing its interests, and in addition, it has the powerful support of the British Government and the alleged sympathy and advice of the Adviser to the Chinese Government.

Unless some step to protect American interests is taken it is not difficult to foresee the time when the door will be closed to any further participation of American manufacturers of engineering materials in the development of China. The present situation concerning the tenders for bridges on the Hukwang Railways is an indication of the intensity of the campaign to secure the adoption of British standards in defiance of the Loan Agreement and the Bankers' Agreement which concedes equal right to the four Powers in the supply of materials for the construction of the lines.

RESUME

We have endeavoured to prove by impartial analysis and honest deduction that the aims and objects of the British Engineers' Association if carried to their logical end, must result in the closing of the door of equal opportunity to American manufacturers in China, and pave the way for the creation of trade jealousies and animosities which if fanned into a flame by the same methods as have characterized the campaign against Germany, can only have one ending. It has been necessary for us to make full use and abuse of Dr. Morrison's published connection with this Association, to make clear the full significance of the propaganda in China. It is obvious that an Association numbering amongst its members the most prominent manufacturers of Great Britain, and the most respected and honored defenders of British prestige in China, can not be held responsible for the use of Dr. Morrison's name as Adviser to their Association, at the same time he was occupying the honored position of Confidential Adviser to the Chinese Government. With an intimate knowledge of Dr. Morrison's honorable work as a journalist, we have been convinced that he never consented to such an abuse of his name, and for two years, notwithstanding frequent urging from American and German firms, we have refrained from making any open comment reflecting on his position. We have therefore been constrained to believe that some official of the Association, was individually responsible for this flagrant breach of decorum. Before completing this argument, we determined to write a frank and open letter to Dr. Morrison pointing out fully and fairly the position he was placed in, and requesting him for a frank reply.

For the logical conclusions we have drawn from Dr. Morrison's published connection with the Association as its Adviser' in our efforts to disclose the full significance of its propaganda in China, we tender full and honest apologies. These deductions have been accepted by Americans and Germans cognizant of his alleged connection through reading the various official reports of the Association, and the columns of its inspired organs, and only a full and amply apology published in all the China papers, can assist towards eradicting this erronious impression. As soon as Dr. Morrison's attention was invited to the facts, he at once wrote to the Secretary and Officials of the Association under date of December 16th, ulto., in the following words:—

" Such a description of me, false as your Association know it to be, is seriously prejudicial to my position in China. Your Association know that I have never been an adviser to them in any capacity whatever nor ever had any communication with them other than to ask for copies of their reports to put in my library.

" At the request of my friend Sir Walter Hillier I, consented to become an Honorary Member of your Association. To describe me as an Adviser to your Association while I am in the service of the Chinese Government is an unwarrantable impertinence. I call upon you at once to publish my resignation as Honorary Member of your Association: you will give the reasons for my so doing, and you will state that I never have been an Adviser to your Association, nor ever will be, and that I emphatically protest against such a discreditable attempt to prejudice the position of an honourable Englishman employed under the Chinese Government."

There is nothing further to be said. This just denunciation from an honorable and conscientious gentleman whose reputation has been filched from him by the unauthorized use of his name in such a manner will meet with cordial approval and sympathy from all who know him, and especially from his fellow journalists irrespective of nationality, who take pride in his selection for the high office he now occupies.

We are informed on the highest authority, that the confidential circulars of the Association to members has emphasized the relation of Dr. Morrison to their campaign, as the main support of the Resident Commissioner at Peking. Much advertisement has been given to the alleged results of the propaganda in China, manufactured for the express purpose of enthusing the members and deluding them into a belief that they were really receiving some tangible returns from the expenditure of their contributions. In effect, it may be frankly asked, what results have been actually achieved? *Nothing. Absolutely nothing.* Dr. Morrison, the widely advertised mainstay of the Association has been in blissful and innocent ignorance of his important position, and with this prop taken away, it is clear that the much heralded results are nil. Dr. Morrison asserts that he never mentioned its name once to any Chinese official, nor has he ever heard its name mentioned by any Chinese official. And those who know him, will believe him.

We are also informed on good authority that Mr. Wheeler, the newly appointed British Mining Adviser to the Chinese Government, is also greatly embarassed by the published claims of the Association, that he was appointed through their efforts. We are also very emphatically assured from sources in Peking, that the Association had absolutely nothing to do with Mr. Wheeler's selection, in fact the high Chinese authorities until recently have been totally ignorant of the existence of the Association, and want to know what it is all about anyway. The efforts of the Association to replace German and American Technical Advisers to the Chinese Government by Englishmen, has so far been unsuccessful.

What then has the Association accomplished in China? In spite of all that has been published in inspired and friendly journals in England, from information supplied by the officials of the Association, the cold unpleasant fact remains, that here in China, it has accomplished nothing, and is rarely if ever heard of. The average Britisher accepts it as the usual Association formed for the purpose of enjoying an annual dinner garnished with mutual admiration speeches. It has never been spoken of seriously by any British subject in China, and when discussed at all it is always with an amused interest in what it accomplishes other than finding employment for a salaried staff, who must bolster up enthusiasm by glowing reports of its work. We may state quite frankly that the open publicity given to the objects and aims of the Association have placed all other nations on their guard, and whatever chance there might have been of attaining its special ends, has now been destroyed. The mere fact that a candidate for the position of Adviser to the Chinese Government on technical matters is indorsed by the Association, is sufficient to nullify his chances of appointment. The Chinese will have none of him, as he comes to them as an advocate for the advancement of special interests.

What is the position of the British Government in all this? Has the Association stopped to consider that every mistake reflects on the honor of the Government? The British Government is undeniably compromised, through the wide advertisement extended to its recognition and support to their campaign, and therefore becomes at least indirectly responsible for its activities.

We are now going to hazard our honest opinion that notwithstanding the wide publicity given to the official support and recognition tendered by the British Foreign Office to the Association and its propaganda, that the British Government has also remained blissfully ignorant of the undignified and scurrilous campaign relentlessly waged against Germany and America with the advertised stamp of its official approval, and, that in justice to the outraged feelings of those who have been insulted, it will feel in duty bound to publicly disavow any further connection with its purposes, and defend its reputation by repudiating any knowledge of its past work.

When the British Government is fully informed that the selfish campaign of one Mr. Stafford Ransome, is responsible for the retaliatory attitude of the French Government, French financiers and manufacturers, it will then open its eyes to a realization of how great is the damage done to British prestige in that quarter. For we are in a position to authoritatively and positively assert that in retaliation for the patriotic British program of the British Engineers' Association, the French Government, early in 1914, was compelled in self-defense to enunciate a new financial policy; that in the future, French loans must be employed for the special advancement of French political and commercial interests abroad, and French materials must be specified in loan agreements, and, furthermore,

owing to the repudiation of an official agreement by the British representative of a joint Anglo-French financial corporation, where the equal rights of the French partners were deliberately ignored apparently with the full cognizance of or negligence of the British authorities, the French Government decreed that in the future French financiers and contractors should be prohibited from entering into similar combinations for construction work abroad. We have full knowledge of, one specific instance where this new doctrine of the French Government was immediately enforced to terminate a long standing and mutually profitable combination of large French and British interests operating in foreign fields. The financial loss to the British manufacturing engineers in this one instance alone was greater than any of the alleged advantages reported to have been gained in China. The Association of French Manufacturers in a meeting held last spring, also passed unanimous resolutions that in future French loans must be employed to advance their special interests, and called on the French Government to formally adopt and carry out this policy. If we stop to consider that many large loans and new issues floated on the London market, as purely British transactions, owe their success to the friendly participation of the French bankers, we can begin to understand the reasons which influenced the French Government to resent the selfish policy of the British Engineers' Association, with its hall marks of Government approval. How many loans for the political and industrial advancement of Great Britain in foreign lands, owe their successful floatation to the sympathetic co-operation of the French banks, and in how few instances can it be truthfully said, that any consideration was ever extended to French industries by the British officials in charge of their expenditure. Not only have French manufacturers been rigidly excluded from any benefits arising from these loans, but we can point to instances where the British Consulting Engineer has strongly condemned the quality and use of French materials in enterprises registered as British, but in reality French. British industrial advance owes more to France, than the manufacturers will ever appreciate. Only the inside ring of international financiers have a full appreciation of what the French money market has done for British trade. The war may wipe out the feeling of resentment, and the French may again harmoniously co-operate with the British banks, and overlook the past,but if they do it will be traceable to a pure sense of gratitude and good fellowship for their Allies, and not because they approve of British methods. These are straight truths, which the misguided agitators in England may well ponder over. A very little investigation amongst the interested high financiers and manufacturers in France will testify to the truth of the above statements. The French policy was quietly adopted without any of the publicity accorded to the British program, and as they have a way of pulling harmoniously together for the national welfare that is unknown in Great Britain, they can accomplish results that are impossible to attain in other countries. The French Government's absolute control of the Bourse and new issues, enables them to rigidly enforce any program they decide is best for France, and unless the war compels a modification of the present attitude, the future will show that the British Engineers' Association, has caused more harm to its national interests than good. In fact, it were better if it had never been born.

The French have good naturedly poured out their wealth in the past without any demands for "indispensable" terms, supervision of expenditures or stipulations for the purchase of materials for their manufacturers. They have co-operated fraternally with other interests, and invariably they have been frozen out of the commercial pickings. Their experience in China has taught them a severe lesson, and in the future, when the French bankers are approached to underwrite any proportion of a British railway or industrial loan for this country the French Government will see to it that French materials are purchased in exact proportion to the amount of the loan subscribed for in that country. And to this equitable demand there can be no honest objection. British money will be used to purchase British material and the French financial participation will demand the same privilege, or the British will have to find all the funds themselves. So it is seen that the selfish demands advocated by Mr. Stafford Ransome have firmly closed the door to further French financial aid, unless the latter are accorded proportionate participation in the supply of materials. No more will the British financial institutions unload half their issues on the French market, and selfishly ignore the rights of French manufacturers, and if British interests suffer, they can thank the Secretary of the British Engineers' Association for curtailing their activities. There were other important reasons which determined the French Government to modify its financial policy, reasons already briefly referred to, and having a direct bearing on the re-establishment of the Spheres of Influence in China, which will be discussed in their proper place.

We ask all honest Britons to give careful consideration to these facts. We have not drawn on our imagination, but have a personal knowledge gathered at first hand in Paris from those most deeply interested. If the campaign of the British Engineers' Association, aggravated by the sharp practice of the agent of the British official railway organization in China, determined the French to take effective steps to defend their own interests, can anyone conscientiously denounce the Germans, if they too felt compelled to take the same measures of self-protection against the operations if the British Association? The virulent campaign against Germany, commenced with the appearance of "Eastern Engineering" in 1910, receiving impetus through the incorporation of the British Engineers' Association and the appointment of Mr. Ransome to the position of its Secretary, in 1912, and then assumed international prominence through the widespread publccity given to the official approval of the British Government to the objects of the Association. If the French Government and its financial and manufacturing concerns deemed it essential for the preservation of their combined political and commercial interests to quietly adopt retaliatory measures early last year, does it not signify that the loudly denounced scheme for the similar advancement of German trade abroad, might also be traceable to the desire to defend itself against the implacable, unreasonable and undignified campaign conducted by the secretary of the British Association? Sir E. Goschen's first report on the German scheme transmitted to the British Foreign Office bears the date of February 27, 1914, clearly indicating that the German and French Governments determined to adopt the same policy at about the same time. The German scheme was devised four years after the opening of the British attack on their methods, and two years after the reported formal alliance of the British Foreign Office with the British Engineers' Association. And yet in the face of these positive facts, a unanimous British press has virtuously denounced the German scheme as highly immoral, and asks the world to accept their biased viewpoint. If the full force of the British campaign had been directed against Americans, the latter would never have waited for over two years before adopting measures of defense, and if they had become convinced as the Germans did, that the entire weight of the British Government was behind the British campaign to eliminate them from the markets of the world, well, all we have to say, that knowing the temper of the American people, they would have demanded an immediate explanation, through their Government, and, failing to receive a satisfactory reply, no questions of ethics or morality would have deterred them from protecting themselves by every means within their power, and girding themselves for the inevitable life and death struggle, against an unscrupulous enemy.

If we recognize that Britain already owns as much of the earth as she can safely govern, and that the most valuable markets are under her undisputed control, and we accept the fact that the one rich field open to the equal competition of all nations, is China, and, if we remember that Germany's colonies are poor and thinly inhabited by aborigines with primitive wants, it is clear that the most important field left in the world where German trade can be profitably advanced is centered in the great undeveloped but potential markets of China. By a process of elimination of other fields, an analysis of the possibilities for any great expansion in the world's trade, conclusively designates China as the present and future strategic battlefield for commercial supremacy. Any open campaign which has for its objective the elimination of influence, and the unrestricted right of any nation to conduct business along the only lines open to legitimate competition, must be accepted by spirited people as a direct menace to their national existence, and if persisted in, can only be solved by a resort to arms. The political strategics involved in the issues between the warring nations have obscured

the fundamental principles at stake. The neutral nations are invited to assimilate the mass of conflicting official statements, and asked to believe that Germany alone is guilty for this horror of the Ages. For the political events which precipitated the war, Austria, Germany and Russia must assume full responsibility at the bar of the world's judgment, but for those deeper commercial forces which unconsciously create and intensify national hatreds, and sooner or later drive a maddened and goaded nation to desperation and compel it to strike blindly with all its power to save itself from extinction, for these provoking influences, are critics justified in asking, in the face of overwhelming proofs, if Great Britain is not largely responsible?

We have seen the germ of jealousy grow from the warped brain of a misguided and uninformed journalist, and blossom out into a bitter, vindictive and implacable campaign, using as its weapons calumnies and misrepresentations and as its battle cry, the "Elimination of the German Blight." Around the standard of this narrow minded patriot, gathered the cohorts of British industrialism, under the full official sanction and approval of the British Government. German competition in China must be wiped out, and the campaign was launched to oust her from this field where she had an even chance to compete and expand. The denunciation of German methods coming from those whose tactics in China are equally open to just censure, and the tenacity of purpose to prejudice the Chinese mind by the most unfair criticisms and comparisons; the proclaimed intention to replace all German Advisers and instructors by Englishmen, all slowly served to delude them into the firm belief that a widespread British conspiracy in which Government, Commerce and Press were united, had been set in motion to destroy the fruits of their long, hard years of patient application to business in China. The British Government may honestly disavow any connection with the aims and objects of the campaign, and the Association may as honestly repudiate the policy of the bloodthirsty journal linked with its work, and the world will accept their statements, but it is too late. The damage has been done. They must go on with the butchery, forward with the carnival of blood and the orgy of death until a broken nation cries out in agony for quarter. If Germany is guilty of precipitating this horror, there are powerful interests in Great Britain who cannot hide behind the skirts of outraged Belgium, to escape from the charge of driving commercial Germany to the verge of desperation and provoking her into hostilities.

There are many events connected with this phase of the issue, which the Blue Books and similar official publications fail to disclose. The reader will find no reference to China in any of these documents, but the question of the Open Door and the right of equal opportunity to trade in China, is as much a part of this war as the integrity of Belgium, or the independence of Servia, and in due time this side of the question will receive full prominence, and will have to be squarely faced by the great European Powers if the world is to have lasting peace.

With a desire to take the construction of all future railways in China proper, out of international politics, and concede equal participation to the four great manufacturing and lending nations in the development of the country, the Chinese Government early last year determined to organize an International Construction and Finance Company to put these ideas into practical effect. A national scheme of railways calling for the construction of 10,000 miles in the next ten years was designed to be equally divided between Great Britain, France, Germany and America. The plan as designed and developed was immediately accepted and approved by the leading construction firms, fully supported by the strongest financial institutions in their respective countries.

The Company was organized in Paris in April last, the Chinese Government receiving the most favorable terms ever conceded to her in railway work and establishing new principles in financial control and recognition of her sovereign rights and the honesty of her financial institutions. Complete harmony and mutual understanding prevailed between all parties, and the essential basic points were amicably agreed to. In effect, it was a complete success and a signal victory and advance for China, as by the elimination of all politics, terms were secured that had been previously vigorously opposed by the official groups. As the French and German official financial groups were standing behind their participants in the new proposition, it is a clear indication that they were willing to concede terms other than those deemed "indispensable" by the British Government and its official financial organization. Each country would have received equitable and honorable consideration in the development of China, and the Central Government would have been relieved of the constant pressure and demands for special railway concessions, and permitted to concentrate its energies to the reconstruction of the country. The neutralization of China would have been guaranteed, and its integrity assured during the critical years when the people were undergoing the process of political evolution, and the harassed Government was consolidating its power and bringing the discordant elements into harmony.

What then caused the collapse of this scheme? There were two causes, but the first and most serious bar to its success was the unbending attitude of the British Foreign Office. It said in effect, "We recognize the International Construction Company in principle, but all railway lines which traverse or encroach on the Yangtsze Valley, must be built by the British participant in the Company, and, furthermore, before we can give our support to the scheme, the Chinese Government must approach us through the regular diplomatic channels, and submit the scheme for our approval." In other words, the British Government reserved to itself the right to supervise and approve any national railway scheme for China, and coldly applied the doctrine of the Spheres of Influence, and rejected the principles of the Open Door. As Germany refused to be bound by a "scrap of paper" in regard to Belgium, so Great Britain went back on her pledged word to respect the rights of all nations to equal opportunity in China. The right of Germany and America to participate in any future railway construction in the Yangtsze Valley was ignored. Germany could still retain her footing in Shantung, but America was frozen out in the cold. These facts were duly transmitted through the German and American participants to their respective Governments. The original guardians of the Open Door, who for thirteen years had faithfully fulfilled their trust, however, had been relieved from duty, and their place taken by disinterested and high principled officials who trusted to the binding power of a "scrap of paper" to protect American interests in China. So the American Government did—*nothing*. The German authorities however were deeply concerned, and saw in the attitude of Great Britain only another proof that the door in China was to be effectively closed to further participation in railway development, and that they were to be confined to the Province of Shantung, while the great rich and productive sections of China were to be reserved for exclusive British exploitation. As the British attitude lacked official corroboration, the German Government had no diplomatic excuse for requesting a formal explanation, and owing to its exclusive policy in Shantung had no moral right to enter such a protest. In the meanwhile the murder of the Austrian Archduke occurred, and the evidence implicating Servian officials rapidly accumulated, which set all Austria afire with the passion for revenge. And at this critical juncture, the British Foreign Minister was compelled to openly indicate his policy towards China, in answer to questions in the House of Commons on July 10th., ulto.

"We have not got any special title to the Yangtsze, except that we have already got vested British railway interests in that region, and we hold that we have the right further, to develop railways in such districts, and that new railway concessions ought to be British Concessions."

There are other parts of his speech which indicate that Sir Edward Grey, was honestly endeavoring to find some solution to the perplexing problems surrounding railway construction in China. The problem had been equitably and honorably solved, conceding to British interests all their rights under the Open Door declarations. but the Foreign Office had rejected it a month previous, and at that time held out for exclusive British control in the Yangtsze Valley, and the above quotation from his speech on July 10th, would tend to confirm that he had no intention of deviating from this set policy. If the British Foreign Minister expressed the idea in London that new railway concessions in the Yangtsze, *ought* to be British, it is fair to assume that every means will be taken so that they *shall* be British.

If we now add this fact to our long list of previous

provocations, it is not difficult to honestly imagine just how this speech was received in Berlin. This enunciation of policy absolutely destroyed any lingering hope that the principles of the Open Door would be adhered to by Britain in the future and that the same rigid exclusion enforced by Germany in Shantung would henceforth apply to the Yangtsze Valley. America who was most deeply concerned, although fully informed as to the trend of British policy, made no move to request an explanation. The Door had been closed in her face with a bang and a peace loving Secretary of State on whose shoulders rested the responsibility of guarding the Door, refused to take notice and went ahead preparing his twenty second peace treaty. Disinterested and prosperous America could afford to ignore her exclusion from China, and see her place as guardian of the Door, taken over by vigilant and agressive Japan. American manufacturers do not need the Chinese market—not now. We sacrificed our national honor; but what is honor amongst friends anyhow.

These are facts that have been hidden by both sides. As people gather the full meaning of all that these truths bring home to their minds, there will have to be a readjustment of opinion.

What do all these truths convey to us? What is the great fundamental principle involved in this epoch making war of the nations? The chastisement of Servia, and the integrity of Belgium all fade into insignificance before the vital, all important basic commercial issues. And although Germany created the precedent in Shantung, and has violated the spirit of the Open Door agreements, in her rigid exclusion of other interests, Americans will feel deeply for her, for it is logical to deduce that just so sure as Germany's commerce is destroyed and her industries wrecked, just so certain will the campaign of hate be turned on America as the next formidable competitor, and despite the ties of blood, and all that we hold most dear, the unappeasable, voracious forces behind the mighty Moloch of British industry, will demand our sacrifice on the altar of their trade supremacy with the same vengeful spirit that is now shown towards Germany. If Germany has erred, so Britain has also sinned. There is no palliation for either side. The way towards peace, is now blocked by the lust for revenge. Germany may be defeated, but the German people cannot be exterminated. The women will remain and will breed sons, the land will be there, and the factories will again hum with the noise of industry. The Germans under any Government will have to live and be permitted the right to compete, and the same qualities of application to work, and the readiness to meet changed conditions will again bring their just rewards. If British writers can desist long enough from their denunciations of German culture and barbarism, and let this thought seep into their minds, and that under similar conditions any other nation would strike blindly to save its commerce from extinction, then perhaps the road may be opened for the declaration of a truce and a discussion of terms of peace. As long as Britain deludes herself and the rest of the world that she alone is the injured party in this war, the dawn of peace will be indefinitely delayed. A mutual understanding of each other's rights is essential before overtures for peace will receive consideration.

This may all prove very disagreeable reading for honorable Britions, but we feel that the truth must be told by some one, and as British writers and the British press are prohibited from a discussion of these fundamental and self-evident facts, the obligation to undertake the unpleasant task devolves upon some friendly American writer. We may be misconstrued and maligned, but we rise above the petty criticism of the bigoted partisan, and appeal to that broad spirit of fair play inherent in the character of the common race. The lives of the best and noblest of Europe are paying for the terrible mistakes of the last decade. Hunger, privation and misery have befallen countless thousands of innocent victims, the national life of Belgium has been extinguished and her peoples scattered broadcast over the world to subsist on the charity of strangers, and it all fades into insignificance before the toll of blood that must yet be exacted, with its aftermath of misery and broken hearts. And with this vision of desolation before us, we again proclaim that we cannot remain mute and disinterested, and permit the campaign whose end is death, to be turned on America, and calmly watch the sapping of Anglo-American friendship, without making one supreme appeal to reason.

There is only one road open for the common race to travel; the broad path of friendly understanding and harmonious intercourse, that leads to permanent peace and good will. If this goal is to be reached, and the world saved the horrors of another crime against humanity, then, Britain must stand shoulder to shoulder with her kindred on the other shores of the Atlantic and play the game in China and elsewhere according to the rules on which our common civilization is founded. Americans can tolerate and overlook any infraction of these rules from other peoples, but they expect and demand from their own kind, a rigid and uncompromising adherance to those ethics and codes of honour which have made us both what we are. Americans will never again go to war with Britain, but there can be a loss of sympathy and respect, which would cause as much commercial injury as though the armies and fleets of both sides were busily engaged in cutting each other's throats. And so with this knowledge, we feel justified in making our appeal to reason. If we be misinterpreted, and find it impossible to continue the publication of an honest and independent newspaper, and that we are to be penalized by the withdrawal of advertising support, for our frank exposition of these fundamental truths and uncontrovertable facts, then we will gladly accept the situation, and return light-heartedly to the farm, conscions of having been true to our principles and the higher code of journalistic ethics which inspires our work.

G.B.R.

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September 4, 1914

BRITISH ENGINEERING IN CHINA

We are glad to learn that, in spite of the great national crisis created by the war, the British Engineers' Association is pursuing its activities with unabated energy. As our readers know, the Association is an organisation formed with the object of overcoming by collective influence the serious and growing obstacles which tell against the interests of British manufacturing engineers —obstacles which the individual firm, however powerful, cannot hope to overcome. It has an immense field for its operations in China alone, and it is to that country that its members are first turning their attention.

We may remind our readers that, in addition to establishing its head-quarters in London, it has sent out to China a Chief Commissioner and an engineer assistant, who actively investigate and report weekly to the Association as to possibilities of suitable contracts and what should be done in the best interests of members. The Chief Commissioner is in frequent communication with the British Legation in Peking, and has already, it is claimed, done much valuable work.

In another matter, too, the Association is to be congratulated upon having succeeded in obtaining the appointment of a British engineer as mining adviser to the Chinese Government, and, we understand, is also endeavouring to secure other kindred appointments. All this is excellent work, and it is laying the foundation for important engineering business with China when the time is ripe. Those who till the ground and sow the first seeds will reap the harvest. With a settled Government in China immense possibilities for trade will be opened up in that vast kingdom, and particularly in the engineering branches. There is no reason why British engineers should not receive a large share of this business. The British Engineers' Association shouul help them to this end, and therefore should receive their hearty support and co-operation. By its powerful organisation it can get into touch with channels of business which would otherwise not be obtained by its members, and we believe it has already arranged that materials and machinery for certain large contracts shall only be purchased from its members. Finally, it should be borne in mind that it has established cordial relations with the Foreign Office, and has obtained support collectively which it was previously impossible to extend to individual manufacturers. There are, we need scarcely say, keen competitors in the field for the trade of China, and British merchants and manufacturers would do well to leave no stone unturned which will enable them to secure their fair share. What the effect of the great European war will be upon some of those competitors it is too early to speculate yet, but this much may be said, that when peace is once more restored the opportunities for trade should be greater and not less.

THE OFFICIAL CIRCULAR OF THE BRITISH ENGINEERS' ASSOCIATION

JUNE, 1913

THE COUNCIL.

PRESIDENT:

Mr. Douglas Vickers.

VICE-PRESIDENTS:

Mr. T. O. Callender.
Sir Robert A. Hadfield, F.R.S.
Mr. Herbert Marshall.
The Rt. Hon. Sir William Mather, P.C., LL.D.
Sir John I. Thornycroft, LL.D., F.R.S.

CHAIRMAN OF EXECUTIVE COMMITTEE:

Mr. Wilfrid Stokes (*Ransomes & Rapier, Ltd.*).

OTHER MEMBERS OF COUNCIL:

Mr. H. Allcock (*W. T. Glover & Co., Ltd.*).
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Mr. T. Cuthbert Stewart (*Stewarts & Lloyds, Ltd.*).
Mr. Philip Thaine (*Vickers, Ltd.*).
Mr. John E. Thorncroft (*John I. Thornycroft & Co., Ltd.*).
Mr. Thomas Woof (*Alfred Herbert, Ltd.*).

COMMISSIONER IN CHINA:

Captain T. C. Fitz-Hugh, M.V.O.

SECRETARY:

Mr. Stafford Ransome.

The Honorary Members:

Mr. Byron Brenan, C.M.G., *Late Consul-General in China.*
Sir Charles Dudgeon, *One of the Commissioners for the Revision of Commercial Treaties with China.*
Sir Charles Eliot, K.C.M.G., C.B,, LL.D., *Vice-Chancellor of the Hongkong University.*
Sir Walter Hillier, K.C.M.G., C.B., *Late Adviser to the Chinese Government.*
Mr. Claude Kinder, C.M.G., *The creator of the Chinese Railway System.*
His Excellency Sir Frederick Lugard, G.C.M G., C.B., D.S.O., *Governor of Nigeria, and formerly Governor of Hongkong.*
Dr. George Ernest Morrison, *Newly appointed Adviser to the Chinese Government.*

The Necessity for the Association.

The British Engineers' Association is an organisation formed for *overcoming by collective influence the serious and growing obstacles which tell against the interests of British manufacturing engineers; obstacles which the individual firm, however powerful, cannot hope to overcome.* The immediate attention of the Association is devoted to China.

The vital necessity for a great national Association with these ends in view is generally recognised by manufacturers and others who have a knowledge of China. The greatest of all engineering authorities on this subject, Mr. Claude Kinder, C.M.G., the founder of the Chinese Railway System, has expressed his views in the following letter addressed to the Secretary of the Association:—

KELVIN, FLEET, HANTS.

October 5th, 1912.

DEAR SIR,

As I understand that your Council wish to have my views on the subject of the British Engineers' Association, I will speak very frankly on the matter.

I have followed the evolution of your scheme ever since I read the article in *Eastern Engineering* early last year which gave birth to it, and the movement from the start has had my sincere sympathy. In fact, the only objection I have to the Association is that it was not started twenty years ago.

I look on an Association of the sort not merely as an advantage to the British manufacturing engineer, but a **dire and urgent necessity.** For his foreign competitors are not only infinitely better organised than he for dealing with Chinese contracts, but they have shown a faculty for grouping their interests and systematically tackling the Chinese market that British firms have been curiously reluctant to adopt. And yet **nothing but an intelligent co-operation between them to overcome the forces arrayed against them can possibly save the situation.**

Our British engineering firms are always slow to move, especially when it is a question of a combination of interests in any way. But, speaking as one who has had the welfare of British engineering in China at heart for over thirty years, I can only say that unless an effective Association is brought about to combat the severe and growing difficulties, **we shall, in a few years, find business in that country either impossible to get or not worth having,** which amounts to the same.

It is a great satisfaction to me to find that you have got many engineering firms into line on this subject, but if you are to be really powerful, you require four or five times as many Members as you have to-day.

I consider that it is not only advisable for all reputable British engineering firms to back this movement, but that **it is their duty to do so on common sense as well as on patriotic grounds.**

Yours faithfully,

(Signed) C. W. KINDER.

The opinions of Sir Walter Hillier, Mr. Byron Brenan, Mr. Douglas Vickers, Sir Charles Dudgeon and others on this subject will be found in the speeches at the Inaugural Dinner on pages 22 to 37.

The British Position in China.

Before giving particulars of the constitution of the Association it is well to review briefly the situation in China which has caused its formation.

The Value of China as a Market.

For some years, in spite of the powerful reactionary influences which existed in China until the recent revolution, the progress in that country, and consequently the demand for engineering plant, has been growing with extreme rapidity.

Without going into details, it is well to state the fact that, while Japan, usually cited as the most rapidly progressive country in the world, took thirty years to build 3,000 miles of railway, China has during the last twelve years built no less than 5,000 miles.

Naturally Chinese imports all round have increased very rapidly. During 1910, which was the last complete year of China under the old régime, they were just over £62,000,000 a rise of more than £12,000,000 over the previous year, and £15,000,000 more than Japan's imports for the same period, though 1910 was a record in Japan.

In the year 1911, in spite of the dislocation of trade due to the revolution, the imports amounted to well over £63,000,000.

Chinese engineering imports during 1910, that is to say, *goods which would fall within the range of fi ms who are eligible for membership of this Association*, were about £10,000,000. Of this total the British share may be put approximately at rather over 40 per cent.

In 1911 they rose to £11,800,000.

China, however, is merely at the beginning of her career as an importer of machinery. With her population of something like 450,000,000, *i.e.*, nine times the population of Japan, and perhaps a hundred times the natural resources of that country, possessing a people in whom the business instinct is ingrained, there is no doubt that under the new régime, whatever form that may take, machinery requirements will undoubtedly expand, for the Chinese will be able for the first time to give free vent to their progressive tendencies. From this it is reasonable to suppose that China will become one of the greatest oversea markets for engineering plant.

A Comparison Between China and Japan.

China to-day, so far as her knowledge of engineering is concerned, is very much in the condition of Japan some thirty-five years ago, but the position of the British engineer in China is by no means as strong as it was in Japan at that period.

In dealing with Japan in the early days British engineers had an immense advantage over all their competitors. This was due to two causes: (1) Japan selected and paid for her own advisers and instructors and financed her own industrial enterprises. (2) She selected, as far as engineering was concerned, British advisers and instructors in nearly every case.

Thus the early Japanese engineers were not only thoroughly imbued with a predilection for British plant, but their engineering education was all absorbed on British lines. The intimacy between the Japanese student and the British professor not only accentuated that leaning towards British products in the early days, but its influence has continued even to this day, though the Japanese now consider that they are no longer in need of European advice.

In China matters are on quite a different footing. There are some eight nationalities vying with each other in lending money to China for industrial enterprises, and clamouring for industrial concessions. Out of these countries Great Britain is the only one who does not couple with her financial assistance some stipulation as to a *quid pro quo* in the way of contracts from China, or that engineers of that nationality shall be employed in connection with the undertaking for which the money is found. China is thus forced to take her advisers from the countries who lend her money except when Great Britain is the lender, and the result is that British influence is being ousted.

Diplomatic and Consular Conditions.

The foreign diplomatic and consular services in China in every case, with the exception of the British, are leaving no stone unturned to force the trade into their own respective countries. The British Government has been proverbially apathetic on this subject. It is true that of late years it has gone to some trouble to issue reports more systematically and of a better quality than in times gone by, but the organisation for collecting information, though expensive, is still less effective than that of other Powers. Thus Britain's foreign competitors are better informed. The Government, however, is giving its support to this Association in carrying out its objects in China.

German and American Influence on Chinese Education.

Britain's two strongest competitors, Germany and the United States, are making a very serious bid for the education of the Chinese engineer. The Germans, with their model dockyard at Tsingtao, have properly organised engineering works where young Chinese are encouraged to attend and learn thoroughly, not only the German language, but engineering and dockyard practice, and large sums of money are expended in bringing to Germany the right class of Chinese for their engineering training.

German manufacturing engineers on their own account have an Association for dealing with their over-seas interests by means of a resident Commissioner with suitable offices and staff, and have subscribed large sums for the purpose of creating three purely German engineering schools in China. These schools are to be effective nurseries for the German machinery trade. German diplomacy, too, has succeeded in introducing the German professorial element very largely into Chinese native schools.

The Americans have gone a step farther. They waived a portion of their war indemnity against China after the Boxer rebellion on the understanding that the money should be spent in sending over the right class of Chinese to the United States for the purpose of theoretical and practical education.

Both the United States and Germany have their own journals catering for Chinese requirements, and in them engineering and industrial matters generally preponderate. One of these German journals has an English title, and is printed throughout in English.

Thus on the one hand the G rmans are spending large sums of money to create and foster a knowledge of the German language by their technical schools, and on the other are utilising the English language to secure trade pending the realisation of their scholastic ideals.

The Banking Facilities of other Nations.

The German, the American, the French and the Belgian banks are all strengthening the hands of their respective manufacturers in every way. They give facilities for financing large contracts which are unobtainable by British firms from their own bankers, and which constantly tell against British chances of business. One of the most serious results of this policy is that often by the time the British manufacturer hears that an order is to be placed and is offered an opportunity to tender, the whole matter is cut and dried, and the fact that the contract is to be placed with one or other of the foreign firms is a foregone conclusion.

The Association and the Merchants.

It is only natural that in an Association, the fundamental principle of which is that it represents manufacturers only, merchant firms cannot be eligible for membership. The Association, however, fully recognises the valuable and essential part played by the merchants in China and elsewhere in the conduct of successful engineering business, and attaches great value to their sympathetic co-operation with its members.

It should be clearly understood, therefore, that it is no part of the business of this Association to work against the merchants or to interfere with their trade or to discourage its Members from dealing with them. The great object of the Association, in fact, is to increase the trade between China and Great Britain, and thus to strengthen the relations between the merchants and the British engineering firms.

The Influence of the Engineering Industry.

There is an immense amount of dormant influence in the engineering industry of this country, comprising as it does firms with a collective capital the magnitude of which can be gauged by the fact that the wages paid in this industry amount to over £100,000,000 annually. Such an industry, if adequately organised for the purpose of overcoming the obstacles which

stand in its way, possesses the power to advise the Government authoritatively on matters which concern engineering interests and to insist on those interests being raised above the sphere of Party politics.

In like manner it has the power to insist on fair treatment from the banks, the shipping and railway companies and others whose existence is largely dependent on the patronage of the engineering industry. *Until now this great power has never been made use of for the purpose of increasing British engineering business.*

It is the purpose of the Association to transform that dormant influence into an active force to be utilised not for the benefit of any individual manufacturer, but for that of the British engineering trade as a whole so far as it is represented by the Members of this Association. Consequently, it is to the direct interest of every bona fide manufacturing engineer or maker of engineering accessories to join this Association and support it in every possible way.

THE POSITION OF LARGE AND SMALL FIRMS.

Certain firms have expressed the opinion that the larger firms will reap a greater proportionate advantage from this Association than others, but such is not the case. It is only natural that those firms who spend a great deal of money in China, and either possess their own branches or representatives, should profit thereby. But the smaller firms who have no such arrangements will, by joining this Association, have the inestimable advantage of gaining a knowledge of the conditions of trade in China, and, either in conjunction with other firms or otherwise, will be in a position to secure trade which they cannot hope to get without joining the Association.

The fact that a firm does no direct trade with China makes it none the less necessary for that firm to join the Association. The best means of securing indirect trade with China is to assist those British firms who are endeavouring, through the Association, *to secure the trade for this country.*

It is in order to give all eligible firms an opportunity of joining that the annual subscription has been placed at a low figure.

The Scope, Objects and Constitution.

INCORPORATION UNDER A BOARD OF TRADE CERTIFICATE.

The Association was formally incorporated on April 26th 1912, under a license from the Board of Trade, and is now carried on under the Companies Consolidation Act, 1908. Consequently the liability of its members is limited. It is not a trading or profit making concern and the privileges of all its members are identical.

For the time being the Association's attention is directed exclusively to China, as that country is the one where British engineering interests are threatened more than in any other. But as soon as the membership warrants it, the Association's influence will be extended to other parts of the world where British engineering interests are menaced.

In order to avoid conflicting interests the membership is strictly confined to actual manufacturers. *The Association is unconnected with any business concern.* Its policy is to promote the interests of its members as a whole, and *not to interfere with their existing business arrangements in any way.*

OFFICIAL RECOGNITION BY THE FOREIGN OFFICE.

The Association received the formal recognition of the Foreign Office on December 20th, 1912, and its status is recognised by the Chinese authorities *The British Minister in Peking has been instructed by the Secretary of State for Foreign Affairs to give his official support to the Members of this Association who may be travelling in China, and to instruct the British Consuls throughout China to do the same.*

THE OFFICIAL DESIGN.

The distinguishing design or "chop," reproduced below, has been adopted by the Association, and lodged with the Consul-General in Shanghai. It is used by members of the Association in connection with their Chinese business for purposes of identification, either on their letter paper, or visiting cards, or as name plates on their machinery. It rests with the Members of this Association to cause the Chinese to regard this design as a guarantee of good quality as well as of the British origin of the machinery on which it appears, and of fair treatment by the firms who use it.

The Chinese characters in this design represent the equivalent in Chinese of "The British Engineers' Association." Written and pronounced in English the Chinese title is "Ying Kuo Chih Tsao Shih Hui."

THE GOVERNING BODY.

The Association is governed by a Council consisting of a President, five Vice-Presidents, and not less than fifteen or more than thirty ordinary members of Council, elected annually from all the members of the Association.

An Executive Committee carries on the active business of the Association. The Executive Committee is elected by the Council from among its own members.

The Association is fortunate in having seven of the most eminent living authorities on China as Honorary Members and ADVISERS.

THE ASSOCIATION'S WORK IN CHINA.

The work of the Association in China is carried on by a resident Commissioner or official representative. His headquarters are in Peking.* He is in close touch with the other business centres of China by frequent personal visits and through the agency of correspondents in such places.

The filling of this position required a great deal of care on the part of the Council, as it was essential that the Association's Commissioner should not only have a thorough knowledge of the Chinese language and methods, but should also be intimately acquainted with high Chinese officials and with the officials of the British and other Legations. The Association has been fortunate in securing the services of a gentleman who possesses these qualifications in a high degree.

The duties of the Commissioner may be classified in the following manner:—

(1) To gain an inner knowledge of all those matters which affect British engineering interests and to keep the Association promptly and accurately informed on these subjects.

(2) *To use his influence and that of the Association to secure, as far as possible, British advisers and instructors to the Chinese in engineering matters.*

(3) To know how contracts are to be given out and to influence buyers in favour of Members of the Association.

(4) To get the names of Members on the Government and other lists in connection with contracts.

(5) To make it clear to the Chinese purchasers that they will be treated fairly by Members of this Association and that its Members are capable, between them, of supplying *everything* in the way of engineering plant that China may require.

(6) To make full use of the fact that the Association is formally recognised by the Foreign Office.

(7) To introduce Members who may be travelling in China to officials or any one who can help them to secure business.

(8) To be constantly on the look-out for young Chinese who are destined to be engineers and are likely to occupy good positions so that they can be trained under British influence either in China or Great Britain.

The Commissioner is not entitled to give any advice or assistance to any one, even if an applicant for advice purports to be the agent or representative of a Member, unless he possesses credentials from the Association.

THE OBJECTS.

The objects for which the Association is established, as set forth in the Memorandum of Association, are:—

* The Commissioner, who is at the present time (April, 1913) on a visit to England, will return to China in the course of a few months.

(*1*) *To promote and protect the general interests of British manufacturing engineers.*

(*2*) *To consider all questions connected with such interests.*

(*3*) *To promote or oppose legislation and other measures affecting such interests.*

(*4*) *To collect and circulate statistics and other information affecting the general interests of British Engineers and to diffuse amongst its members information on all matters affecting such interests.*

(*5*) *To support the British Government, bankers, financial corporations, shipping and railway companies, and any other organisations in promoting the general interests of British manufacturing engineers.*

(*6*) *To watch and report upon the methods and progress of foreign competitors in Asiatic and other markets and to suggest methods of counteracting foreign influences.*

(*7*) *To encourage the predominance of British technical instructors in Asiatic and other schools.*

(*8*) *To encourage technical colleges and schools in Great Britain to give facilities for Oriental and other students, and to establish or aid in the establishment of technical schools abroad for the furtherance of the objects of this Association.*

(*9*) *To aid by advice, co-operation, donations or otherwise any individual or concern who is able to promote the objects of this Association.*

(*10*) *To invite members of the Association to give facilities for the introduction into their works for varying periods of Oriental and other engineers or engineering students.*

(*11*) *To endeavour to make the English language the recognised medium for the transaction of all engineering business.*

THE FUNDS.

The funds of the Association are derived from the subscriptions of members and entrance fees. The first 200 members will be admitted without an entrance fee.

The annual subscription for the time being has been fixed at Ten Guineas, which it is estimated will provide the funds necessary to enable the Association to carry on its work efficiently.

Of the first applicants for membership, *two hundred "Original Members," taken in the order of the priority of their application*, have the advantage of securing full membership from the date of election for three years on payment of a subscription of Twenty-five Pounds.

The whole of the income of the Association will be applied solely towards the promotion of the objects of the Association as set forth in the Memorandum and Articles.

THE QUALIFICATIONS FOR MEMBERSHIP

Article 4 provides the following qualifications for membership:—

"*Candidates for admission as members must be approved by the Council and must be bona fide British manufacturing engineers or bona fide British manufacturers of articles accessory to engineering plant other than those whose interests in foreign manufactures or otherwise might be antagonistic to the objects of the Association, and must be individuals or incorporated bodies. Any unincorporated body or firm falling within the above definition if approved by the Council may have the privilege of membership, meaning thereby the right to nominate any one of its members to be a member of the Association as its representative. All corporate bodies must be represented by either a Director or other responsible official properly accredited and not under 21 years of age. Such representative shall while thus accredited be entitled to all the rights and privileges belonging to membership. Any member ceasing to hold the necessary qualifications as defined above shall ipso facto cease to be a member of the Association and shall forfeit all rights of membership.*"

The fact of a firm possessing engineering or other works or being interested in such works in Great Britain does not *in itself* qualify that firm for membership, nor does the possession of engineering or other works outside Great Britain necessarily disqualify such firm from membership.

The essential point which will determine the qualification is whether in the opinion of the Council the applicant for membership has no foreign interests or connections which are detrimental to the interests of the Association.

THE RETIREMENT OF MEMBERS.

Article 16 provides for the retirement of Members as follows:—

"*A member shall, if he wishes to retire, give a written notice not less than one calendar month before the expiration of the year, of his wish to retire, or he will be liable for the subscription for the ensuing year. Subject as aforesaid, any member may retire at any time on giving one calendar month's notice in writing.*"

The Immediate Advantages of Membership.

The "Objects of the Association," on pages 16 to 18, convey on broad lines the advantages which members will eventually derive from the Association.

It is only natural, however, that the realisation of some of those objects must be the work of time and of effective organisation and management when the Association has attained a full measure of support.

The benefits which members will derive from the Association forthwith may be summarised as follows:—

(1) Members receive at frequent intervals Reports on matters which affect their business interests in China. These reports are issued without the delay which is incurred in the issuing of Government information, and they are untrammelled by those restricting influences which generally rob Government reports of their practical value. They are issued *only to members*. This information alone is worth the annual subscription of Ten Guineas.

(2) Members can obtain, through the Association in London, first-hand information on specific subjects from the Association's Commissioner in China.

(3) Members who are sending representatives to China can obtain from the Association credentials which will enable them to make use of the Commissioner's services and any other facilities in China which the Association can afford them for the furthering of their business.

(*4*) *As the Association has the official recognition of the Foreign Office, it can obtain for its Members the support of the British diplomatic and consular officers throughout China.*

(5) Members who wish to estimate for a particular contract in China, but have not a permanent representative of their own, can be put in touch with technical men on the spot who can negotiate the matter on their behalf.

(6) Members can by collective action control the conditions of tendering both in the Home and Foreign Markets. Thus objectionable clauses in specifications can be successfully combated.

(7) Members are notified of any important Chinese who may be in Europe in connection with engineering contracts.

(8) Members are warned of undesirable business connections in China.

(9) Members can have their names, addresses and specialities printed on a list in English and Chinese which will be issued by the Association to the Consuls and the European and native purchasers in China.

(10) Members who wish to publish any of their documents in Chinese can be put into touch with competent Chinese translators and writers in London.

(11) Members who wish to train Chinese students in their works as a means of obtaining orders later on, can apply to the Association's Commissioner, through the Association, to find such students for them.

(12) Members can obtain business from their fellow-Members. There is a growing tendency for Members to place orders with each other, and the Secretary is often applied to for the names of Members who manufacture some particular article.

NEUTRAL THOUGHTS ON THE NEUTRALIZATION OF CHINA

II

THE SELECTION OF ADVISERS

The death of the Honorable W. W. Rockhill, while occupying the position of Adviser to President Yuan Shih-kai, almost coincident with the arrival in China of Dr. Charles W. Eliot's Report to the Carnegie Endowment for International Peace, in which the problem of selecting competent Advisers to the Chinese Government was frankly presented, recalls a subject we have been very loath to refer to for fear of being misinterpreted. The occasion for a further presentation of certain facts surrounding this most important question is however so opportune, and has such an immediate bearing on the welfare of China, and the rights of all nations to legitimate participation in the development of this country, that we feel fully justified in reviving the question.

In the May, 1911, issue of THE FAR EASTERN REVIEW appeared an article entitled "Foreign Advisers in China," based on Mr. J. K. Ohl's correspondence in "The New York Herald," which faithfully reflected the then pronounced sentiment held by prominent Chinese against the employment of Foreign Advisers at Peking. The article was inspired by the situation arising from the reluctance of the Chinese Government to accede to the demands of the Quintuple Banking Group for the appointment of a Financial Adviser in connection with the loan then under negotiation. At that time, or a year previous to the Revolution, the Chinese Government held very decided and well founded views on this subject, as the result of actual experiences.

As the Chinese had never been able to get their thoughts on these matters faithfully presented to the world through the medium of European journalists, they freely expressed their side of the case to a disinterested American correspondent, hoping that through this channel the world might learn the real motives impelling them to resist the demands of the Groups. The names of the high Chinese officials whose words were quoted in this article, for obvious reasons were withheld. Mr. Ohl's comments and the additional facts presented by the FAR EASTERN REVIEW, were therefore construed as only another example of national bias.

The Chinese censored and condemned the policy of Sir Robert Hart, because in all the years he controlled the administration of the Customs, not a single Chinese was ever permitted to hold a position of responsibility, where he might have acquired a training and attained the qualifications to direct other official institutions. Sir Robert Hart advocated the appointment of foreigners to all influential posts, ignoring the legitimate right of competent Chinese to hold positions of trust in a service of their own country, and so indirectly retarded the progress and development of China, at a time in her history when it was essential for her national preservation, that her sons should be given every opportunity to practise and learn the administrative methods of the West under the sympathetic guidance of foreign experts. The Chinese maintain that if Sir Robert Hart, and the foreign Governments, had confided a little more in their honesty, and demonstrated in a practical manner some of the friendship referred to in diplomatic intercourse, and had permitted a few Chinese officials to co-operate in positions of trust, the experience thus gained would have been of inestimable value at the present time, when China so urgently requires men of ripe experience to guide her affairs.

The precedent established by the Customs Service led the Chinese not unnaturally to believe that the employment of foreigners in any official institution of the Government meant eventual foreign control of these institutions. If Sir Robert Hart had permitted the Chinese to gradually occupy responsible positions in the Customs, and had built up the Service with the idea of restoring the control eventually to its rightful owners, instead of acting on the assumption that the collection of its own Customs duties was something China could never successfully perform the Chinese would have always revered his memory. As it is they feel very bitterly his lack of confidence in their integrity Although his fellow countrymen may fairly resent any uncalled-for criticism of Sir Robert Hart's splendid life work, or insinuations against his motives, they must be prepared to face honest discussion of his methods, and the inevitable verdict of dispassionate historians on the action of the foreign Powers in converting a distinctly Chinese national institution into a foreign official bureau, in which the Chinese themselves were debarred from positions of trust. "As long as British trade predominates in China, the Inspector General of Customs must be a British subject," and inferentially this gentleman must be approved by the British Government. There is no resentment on the part of Americans to the application of this policy, in fact the American Government concurred in it as the most equitable solution to a very serious problem. At the time this promise was exacted from China, the intrigues of other Powers to have their own nominees approved as the successor to Sir Robert Hart, constituted a serious menace to the stability of this splendid international organization. In fact, if the British Government had not taken this decisive step, with the full approval of America, the Service would have eventually been exclusively Teutonized, as a scheme having this object in view had been presented to the Chinese Government. Other Powers also entertained similar schemes. So in presenting these arguments, there is no national feeling involved, as Americans fully approve of the wisdom of this step, as the only effective safeguard for the preservation of the efficiency and international character of the institution.

The practice of excluding competent and honest Chinese from responsible administrative positions that would fit them by experience for other important posts in the Government, and so hasten the day when the country can stand alone, is manifestly not only grossly unjust, but a harsh and unnecessary reflection on their capability and integrity. No matter what arguments are advanced by the foreign bondholders to defend such a palpably stern policy, it is only human nature for the Chinese to chafe under this imputation on their character, and bitterly resent the virtual seizure of the most important financial department of their Government. In view of the perpetuation of this scheme of exclusion, are the Chinese justified in believing that this department will never be restored to them? If they cannot be trusted and treated with confidence and permitted an opportunity to prove their integrity and worth, can they be censored if they incline to the belief that there is no use trying to satisfy the foreign creditor with his armies and battleships to support his unfair demands?

If the integrity of China is to be preserved, and the sovereign rights of the Chinese Government are to be respected, and China is to be permitted to solve her many problems without fear of aggression, or in plain words, if China is to remain China, does it not signify that eventually she will be able to pay her obligations, and resume control of her own affairs? Or, let the proposition be put this way: as all the Powers have solemnly declared to maintain the independence of China, does not this imply that the control of the Customs must eventually be restored to the Chinese Government? Then it is only fair to ask, what is the objection to the employment of skilled Chinese officials in posts of importance and responsibility in the Customs? If the Foreign Powers are sincere in their protestations of friendship to China, and are imbued with an honest desire to assist the perplexed and harassed Chinese Government to surmount its difficulties, to stand by her with patience, forbearance and hope, why could not the word

be passed to the present Inspector General of Customs to initiate a new policy in which Chinese employees can be elevated to positions of trust and responsibility? Is it not reasonable to suppose that instead of acting dishonestly, these officials will be as zealous of their reputations as the average foreign official, and perhaps more so, as their record for honesty and efficiency in the Customs will determine their chance of being transferred to other important posts? Would not a little human sympathy and recognition of the rights of the Chinese in their own country, contribute towards creating a better understanding between East and West? Could not the Customs Service be utilized to educate and train competent Chinese officials for positions of trust in other financial and revenue departments of the Government, without impairing the efficiency of the Service, or jeopardizing the security of the Bondholders? If they had been given a larger share in the management of the Customs from the start, would not the country be further advanced to-day and the stability of the Government strengthened by the education and training of a large number of competent and reliable officials whose experience would prove a valuable aid in the reconstruction of the country and in the honest and efficient collection of other revenues? China needs trained men, and they must gain the experience somewhere.

With the precedent of the Customs always before them is it any wonder that the Chinese Government fights to the last ditch against accepting any similar conditions for the protection of foreign bondholders, which may be applied at any time to destroy its administrative independence in other official institutions? Sir Robert Hart is universally recognized as the best Adviser the Chinese Government ever had, but with all his professed faith in them, all his sympathy and untiring efforts in their behalf, he was at the last, only the official representative of the foreign bondholders, and as such was not permitted to repose practical trust in their ability or integrity by permitting them to occupy positions of responsibility. Although the Chinese recognize his high character and are grateful for all that he did in their behalf, way down deep in their hearts they keenly feel and resent the slight placed upon their national character, and deplore the loss of valuable men who might have pulled the country through the present crisis, had the door of opportunity been opened to them in the past.

And with the example of the Customs ever before them is it any wonder that the Chinese view with deep suspicion and concern any proposition or tendency which might lead to eventual foreign control of any other revenue producing departments?

The Chinese also cite their experience with Sir Walter Hillier as another instance where the Adviser continued to advance the interests of his own country rather than those of China which he was employed to serve. Sir Walter Hillier was taken from the British diplomatic service, and appointed Adviser to the Chinese Government. It was soon noticeable that his services were never called on, and when questioned as to the reasons why they did not avail themselves more freely of his advice, they answered quite frankly, "Why should we?" Whenever a case came up involving the British Government, he invariably talked of "we" and "our Government," meaning always the British Government and not the Government of China, in whose service he was.

These questions have been revived by the publication of President Eliot's Report to the Trustees of the Carnegie Peace Endowment. President Eliot spent several months during 1912 in the East conducting a careful examination and inquiry into those fundamental causes and questions which make for national unrest and ultimate strife, and was given exceptional opportunities for frank and personal discussions of important subjects with the leading statesmen of China and Japan. Dr. Eliot soon sensed that China needed competent foreign advice to guide her rulers through this crisis of her history, and discussed this matter with the Revolutionary leaders at Nanking, and later on with President Yuan and the heads of the Government at Peking. Dr. Eliot cannot be accused of having any object in view, by an open and honest presentation of the facts as he found them, except the one of finding SOME ROADS TOWARD PEACE. Dr. Eliot makes several references to the problem of Advisers, which are herewith reproduced in full:—

The Imperial Maritime Customs Service

"At Shanghai I had the best possible opportunities to appreciate the great service which Sir Robert Hart rendered to China in organizing and carrying on for more than a generation the Imperial Maritime Customs Service. This great Service not only collected the customs, and applied the receipts to the payment of the interest on and the reduction of Chinese public loans, but also carried on the lighthouse and day-mark service for the coasts and rivers of China, and planned and executed many important conservancy undertakings in and near the treaty ports.

"At the same time, I came to understand why Chinese administrators are resentful toward the Customs Service, and use the Service as an illustration of the inexpediency of committing Chinese affairs to foreign executive officers, no matter how honest and competent they may be. The Republican officials to-day point out that the Imperial Customs Service in more than forty years has not trained a single competent Chinese official for service in any high office under the present Government. They point out that Sir Robert Hart never gave a Chinese any but a very subordinate position in his great Service, all the high and medium posts being filled with foreigners. They remember, too, that the receipts from customs have been, and must be, appropriated under existing treaties to pay the interest on loans which China was forced to make in order to pay to Western powers war expenses and indemnities.

"The Republican officials had another reason for hesitating to employ foreign advisers in the many departments of the government where their services would be convenient, if not indispensable. They cited numerous instances in which the Chinese government has selected and employed foreigners who have turned out to be unworthy and unsuccessful; and they averred that Chinese administrators are seldom competent to select the right kind of foreign advisers, being often unable to discriminate between the good and the bad, either on personal interviews or by inquiry into the careers of the candidates. They allege an inability to understand Westerners analogous to the supposed incapacity of Westerners to comprehend Chinese manners, ethics, and modes of reasoning. They object also to accepting foreign advisers on the nomination of foreign governments, because of the jealousies and prepossessions which such nominees are wont to represent."

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"The members of the Cabinet with whom I talked admitted frankly that they were unable to man their own departments with competent Chinese. They admitted that the only way to get the work of the government properly done during the next ten years was to employ a considerable number of foreign experts; but almost in the same breath they would say that they could not venture to recommend that foreign experts should be employed immediately in their own bureaus, lest this action should give offense to their constituencies, the secret societies which had organized the revolution. They also urged that the experience of the Chinese had been very unfortunate with experts recommended to the Manchu government by Western governments, that many persons so recommended had proved not to be experts in their several lines and not to be trustworthy, and that the experts so appointed had continued to serve the foreign governments or foreign corporations to whom they owed their appointments rather than the Chinese government, in whose pay they were. They maintained that these objections held against foreign experts employed in industrial and transportation enterprises in China as well as against experts employed by the Chinese government. They maintained that foreign experts ought to be employed by the Chinese government itself without the intervention of any foreign government, and should be wholly devoted to the service of China; but they added that they did not know how to find such experts. They alleged that even Chinese gentlemen educated in Europe or America could not judge the character and capacity of a European or an American by his aspect and speech, and that they were not in position to conduct themselves careful inquiries into the antecedents of experts proposed for Chinese employment. These views

were repeatedly expressed to me during my stay at Peking near the end of April."

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"To this end of successful borrowing on reasonable terms, two measures are essential, (1) the central government must obtain by methods of taxation that have approved themselves to Western scholars and statesmen a sure and ample income, (2) this income must be expended honestly and effectively on objects and in methods which have proved themselves in Western governmental administration. The pressing problem then is—how can these two measures be put into effect with due regard to the honor and future independence of China? It is not reasonable to expect that the existing Chinese official class can furnish men competent to set up a new system of taxation, collect a stable revenue, and then spend that revenue effectively in the ways which have proved to be good in European and American experience. Foreign advisers must obviously be procured, and given authority enough to convince Western capitalists and governments that an adequate national income is to be secured, and that it is to be spent in a modern, scientific way. Having learnt that the Provisional Republican Government felt great difficulty, first, in selecting foreigners by its own unaided action, and secondly, in accepting them on the nomination of foreign governments, I suggested that the Trustees of the Carnegie Endowment for International Peace constitute a body competent to nominate to the Chinese Government advisers on many subjects; because it is a permanent, impartial, disinterested, and respected organization, which, though composed exclusively of Americans, has a broad acquaintance with scholars and experts of all nationalities. At the close of a long conversation, Colonel Tsai asked leave to translate into Chinese a memorandum I had with me in which the above points were concisely stated. He translated it on the spot, and assured me that he would bring it to the attention of the Premier and the President."

"On the next day at a luncheon given by the Prime Minister to me and many members of the President's Cabinet, I had long conversations with Mr. Tong and other secretaries, mainly on the governmental and educational affairs of the Republic; and after the luncheon the Premier took me to an interview with President Yuan Shih-kai, the only other person present being Colonel Tsai, the President's interpreter. At this interview the conversation related exclusively to the difficulties under which the Republic was laboring, and to the best methods of procuring foreign advisers, Mr. Tong remaining silent during the whole conversation. The difficulties about the employment of foreign advisers were of two sorts. On the Chinese side, it appeared that China had had in times past many unfortunate experiences in endeavoring to employ foreign experts, and that the experts selected by foreign governments were very apt to put the interest of their own governments and people before Chinese interests. It was made clear that China needed the services of many foreign experts, but that they must be experts who were primarily servants of the Chinese government, and not of their respective nationalities. I conveyed to the President my suggestion that the Carnegie Endowment for International Peace could be of service to his government in regard to the selection of experts. This interview with the President was conducted with no more ceremony than obtains at the White House, Washington, and with the same kind of courtesy."

The Selection of Foreign Experts

"A few days later, when I had returned to Tientsin, I wrote a letter to Mr. Tong Shao Yi in which I stated at length the method of avoiding all these difficulties concerning the employment of foreign experts by the Chinese Government, through resort to the Trustees of the Carnegie Endowment for International Peace as an impartial and permanent body competent to select foreign advisers for service under the government of China. This letter was delivered by messenger to Mr. Tong Shao Yi at his office in Peking; but a few weeks later Mr. Tong retired from the Cabinet and left Peking.

"On hearing in July that Dr. George Ernest Morrison had been appointed Adviser on Foreign Affairs to President Yuan Shih-kai, I sent him a copy of my letter to Mr. Tong Shao Yi; and in the following January Colonel Tsai sent me through Minister Calhoun and the State Department, Washington, a cablegram requesting on behalf of the President that the Trustees of the Carnegie Endowment for International Peace nominate an American professor well qualified in constitutional law and possessing a special knowledge of the French Constitution as an adviser to be attached to the Chinese committee entrusted with drafting China's republican constitution. The favorable action of the Trustees on this request was recorded some months ago in the minutes of meetings of the Trustees of the Endowment and of the Executive Committee. The Professor selected, Professor Frank Johnson Goodnow of Columbia University, reached Peking early in April, 1913.

"There can be no doubt that within the last twenty-five years, among her widespread people possessing little means of communication, China has developed in her educated class an intense feeling of nationality. The revolution has proved that this sentiment of the educated class is capable of being communicated to millions of the uneducated, and, indeed, has been. The Chinese have now a full sense of Oriental nationalism, as distinguished from Occidental. They have been roused by the sight of another Oriental race suddenly developing a tremendous force in the international world, and asserting its right to control by force Oriental regions which did not originally belong to it. In short, they have had before them the example of Japan. That example has stirred deeply all the Oriental peoples; and it is impossible to say now how far that influence will extend."

Dr. Eliot fully substantiates the facts which Mr. Ohl and The Far Eastern Review presented in 1911 and again gives to the world the innermost thoughts of intelligent Chinese on the question of Advisers. The Chinese had learned by experience that foreign advisers selected by foreign Governments or recommended by private Corporations were very apt to put the interest of their own Government, or the corporation responsible for their appointments, before the interest of China. Since the time when President Eliot discussed this question in 1912 with President Yuan, how many Advisers have been engaged by the Chinese Government, as the result of pressure from foreign Governments? Is it not apparent that Advisers so selected must necessarily set the interests of their own country above those of the Government which pays them their salary? Is it unnatural for the Chinese Government to refrain from availing itself of the advice of such advisers? The position of official Adviser to any department of the Chinese Government can be obtained under pressure by any strong foreign Government, for one of its nationals, but there is no power on earth that can compel the Chinese to confide in or act on the advice of one thus forced on them. They accept the inevitable, and duly pay the required salary, but the Adviser's usefulness is nil. Of what use then is such an Adviser to either party? He cannot advance the interest of his own country, or contribute to the welfare of China as the Chinese refrain from consulting him. In obligation however to those responsible for placing him there, he must retain the position, and draw a large salary, with the full knowledge that the Chinese resent his presence, but cannot or dare not discharge him. The result is, although well provided with Advisers, China is in the position that she cannot rely on the judgment or counsel of those whose first obligation is to their own country instead of the one who pays them a salary. Can any Adviser whose own Government advocates a policy tending to the impairment of China's administrative independence, give conscientious counsel to China, without proving disloyal to his own Government? In this great crisis in China's history can her Government expect impartial advice from advisers whose countries are engaged in a war which has been extended to Chinese territory?

The first duty of an honorable Adviser is to place China's interests above all else, he must be primarily a servant of the Chinese Government and sympathetically and whole-heartedly espouse its cause, to the exclusion of all others. Like Denison in Japan, Stevens in Korea and Stroebel in Siam, he must work quietly and unostentatiously for the Government which relies on his honest and disinterested counsel.

G. B. R.

STATUS OF THE CHINESE NATIONAL RAILWAY CORPORATION

REPORT SUBMITTED TO THE DIRECTOR GENERAL BY THE TECHNICAL SECRETARY, DECEMBER, 1912.

FOREWORD:

So much misinformation has found its way into print concerning Dr. Sun Yat-sen's railway program; his honesty of purpose has been so virulently attacked and the characters of all connected with him have been so persistently maligned by certain foreigners uninformed of his real motives, that I feel in honor bound to make public and at the same time invite the attention of the authorities at Peking to the exact conception held by myself concerning the legal position of the Chinese National Railway Corporation, and its true relation to the Central Government. The following confidential report on The Status of the Chinese National Railway Corporation submitted after a thorough study and analysis of the various legal roads open for its usefulness, was approved of and accepted by Dr. Sun and his associates as the basis of their future work.

When I joined Dr. Sun as Technical Secretary or Adviser to his organization, I soon realized that the scheme possessed potentialities diametrically opposed to the principles of a representative or republican form of government, and instead followed the old Manchu autocratic custom of conferring vast powers on some favorite official, regardless of the higher interests of the country, and without proper safeguards against his dishonesty.

In other words, the appointment of Dr. Sun Yat-sen to control the financing and construction of all the future railways of China, and the power to employ the national credit at his discretion, could be construed by the unsympathetic as the most stupendous piece of political "graft" ever recorded in history. In fact Dr. Sun held a very vague idea as to his exact position and inclined to the belief that he had been granted a personal monopoly of all future railway concessions, and the way was honestly open for the accumulation of an immense fortune for himself and his associates through the sale of these privileges to foreign capitalists. I perceived that sooner or later the scheme would have to be exposed as a gigantic political job, and determined to resign the position, if I found it impossible to find some honorable solution to the problems presented, and so save President Yuan and Dr. Sun from the ridicule which would follow its inevitable denouncement. I am compelled to bear witness, that as soon as Dr. Sun and his associates grasped and assimilated the finer points involved, and clearly understood their exact legal relation to the President, and their duty to their country, their patriotism rose superior to personal considerations, and they unanimously agreed to my arguments, abandoned the idea of a private corporation, and determined to work in harmony with the President as a loyal and faithful official Commission, and to exert their utmost strength to bring the Central Government into harmonious relations with the Provinces in the question of railways.

My views on this matter adopted by Dr. Sun as the basis for his future program bear full testimony to his patriotism and his loyalty at that time to the President, and had these ideas been rigidly followed out, the great Republic of China would have been more firmly established to-day, with Peking and the Provinces in full harmonious accord through a mutual respect and recognition of each other's rights and responsibilities. It is not too late to mend these matters.

Unless the Provinces are ultimately permitted to co-operate in the construction of, and to participate in the profits of railways within their own borders, the time will come when the resources of the Central Government will be inadequate to act as the security or guarantee for railway loans. It may be said, that this point has already been reached. The foreign Powers have refused to permit the Chinese Government to exercise its sovereign right to devise its own national railway scheme, and are determined to continue to compel compliance with their demands for railway concessions for their own political profit and that China shall pay the bills.

At the present time China is actually compromised under foreign loan agreements to the construction of approximately 8,000 miles of railways. The funds for construction have still to be raised abroad as Chinese Government Loans. This means that the Government will be compelled to borrow the enormous sum of $400,000,000 gold in the markets of Europe as soon as conditions justify the issues. These loans will be secured on the physical property and earnings of the lines with the guarantee of the general revenues and good faith of the Chinese Government.

In the present state of the finances it is clear that the surplus revenues of the Central Government are woefully inadequate to meet any great deficiency in the earnings of the proposed new railways. It follows as a natural consequence, that if the lines do not pay in the first few years, and if the treasury fails to meet the

deficit, the lines will have to be taken over and managed by the Bondholders, or to avert this foreign control, the Central Government will be compelled to lay forcible hands on Provincial and Municipal revenues to make up the deficiency in the Central treasury. This, in turn, is certain to create wide-spread discontent, and if the temper of the people has not undergone a radical change in the last two years, to open rebellion, to be suppressed again by the slaughter of thousands of innocent people whose only treason would be the defense of their provincial rights.

The insane competition amongst the European Powers for railway concessions in China must soon be brought to an end, or China's financial back will be broken, and her independence frittered away. Japan's mad scramble for railway privileges and loans in China is remarkable at this time, considering her inability to finance the lines herself, and the improbability of being able to obtain assistance from the European markets. It stands to reason that the British and French investors will be in no mood to finance Japanese or Russian railways in China for years to come, as they have their own loan obligations to take care of as soon as conditions permit them to again turn their attention to China. The cupidity of the Powers has created a situation where it will be impossible to carry out their schemes, for it seems plausible to believe that the European markets will not be able to absorb $400,000,000 gold of Chinese railway bonds in the next decade, except at terms which China cannot entertain. It is natural to infer that if these schemes are carried out at all, they will have to be financed in small instalments by British and French interests, and unless Germany, Russia and Japan can furnish their own funds there will be little chance of their lines being constructed. It is also apparent that owing to the impoverished condition of the treasury the collateral security or guarantee of the Central Government, is inadequate for the entire 8,000 miles. This guarantee may be acceptable for the first few loan issues, but as the loans increase, the value of the guarantee will diminish, and the terms will have to be higher or the loan will fail. There are one or two ways still open for China to save herself. Unless a proper program is outlined and adhered to, a clear path has been opened for the future foreign control of China's railways.

On the other hand there are many unpledged Provincial and Municipal revenues which could be allocated for the initial security to railway loans, revenues which are outside the jurisdiction of the Central Government and cannot be interfered with without provoking internal disorders. The following recommendations to Dr. Sun Yat-sen as to the harmonious co-operation of the Central and Provincial authorities still hold good, and with some modifications can yet be applied to improve the situation. The creation of an independent government railway commission to act as the holding company and mediator between the Central and Provincial Governments so that both sides will equally share the burdens and responsibility and participate in the profits, is one of the roads out of the dilemma. If the present program of construction is followed out, and the 8,000 miles of railways already contracted for are financed and constructed within the next decade, there will have to be some visible increase in the surplus revenues of the Central Government, to admit of the successful flotation of the loans; or, if the loans are floated and the railways fail to earn their fixed charges, and the Government is called upon to make good the deficit from an already depleted treasury, it will have to forcibly seize upon the Provincial or Municipal revenues as the only way to prevent foreign control. This in turn means internal discord and strife.

The reasons for the failure to apply this principle to Dr. Sun's scheme at the outset was due to the difficulty at that time to bring the turbulent Provincial authorities into line. These difficulties do not exist to-day, and the Government could readily and amicably arrange a satisfactory basis of co-operation The second reason for the failure to apply the scheme, is traceable to the great opposition of foreign interests who desire to control and dictate China's financial affairs, and who stubbornly oppose any relaxation of the prerogatives of the Central Government that might establish the right of the Provinces to a voice in their own affairs. In their inflexible adherence to certain financial principles, the foreign official financial institutions backed by the full weight of their respective Governments, have viewed with stern disfavor any direct provincial or municipal loan in China, whereby independent financiers might break through the ringed fence of monopoly and create terms opposed to their ideas of financial supervision and ultimate financial control. Only by supporting a strong autocratic and centralized government at Peking, having absolute control over the credit of provinces and cities, can the monopoly be upheld and the "indispensable" terms perpetuated. To this determination to maintain at all hazards the centralization of power at Peking for the facilitation of forging the chains on China's independence, is traceable the gradual disappearance of those republican principles created by the overthrow of the Manchus, and the recrudescence of autocratic methods having for their ultimate purpose the strangling of free institutions and the right of the people to a voice in their own affairs. And the perplexed, harassed, trusting and inexperienced rulers at Peking, attracted by the lure of gold, are enmeshed and vainly struggling in the web of political finance, from which there is no escape.

China cannot undertake the financing of any new railways as matters now stand, at least until the present trunk lines contracted for are completed. She has been squeezed dry. The financial markets would reject the negotiations for further loans, until their own schemes have been successfully carried through. There are roads of safety open to China, if she will follow them.

G. B. R.

To the

Director General

Chinese National Railway Corporation,

Shanghai

When President Yuan Shih-kai signed the special Mandate in September last, authorizing Ex-President Sun Yat-sen to organize a Central Railway Company, and to finance and construct railways throughout the country, he also decreed that the sum of Tls. 30,000 per month be appropriated from the revenues of the Railway Board, to defray the necessary expenses of this office. The relation of Dr. Sun Yat-sen and his organization to the Central Government, is therefore in the nature of a commission, appointed by, and deriving its powers and finances from the Government, acting in harmony with, but independently of the Ministry of Posts and Communications.

Dr. Sun established offices at Shanghai, and surrounded himself with a staff of assistants, whose salaries were paid from the Government appropriation. Up to this point, the character of a government commission was duly followed, but on opening the offices in Shanghai, the organization was styled The Chinese National Railway *Corporation*. As no Articles of Association had been drawn up, no shares subscribed for, or any moneys paid in, it is evident that as a Corporation it had no legal commercial existence.

The powers conferred by the Presidential Mandate, being too indefinite to admit of successful negotiations with capitalists for the financing of Chinese Railways, it was decided that a charter amplifying and defining these powers be drawn up and submitted to the President and National Assembly for approval.

The proposed charter grants to the Chinese National Railway *Corporation* certain broad and well defined rights for the financing and construction of future railways in China, amongst which is the right to build lines by the proceeds of a government loan or guarantee of bonds, subject to the approval of the National Assembly.

The granting of the Charter implies the existence of a Corporation, which is misleading, as the Corporation *exists in name only.* The question naturally arises; if the National Assembly and the President concede a Charter to a Commercial Corporation which does not exist, will it remain legal and binding? Is it legal or proper for the National Assembly and the President to grant such wide powers to a corporation whose Articles of Association have not yet been drawn up, and whose future directors and shareholders are unknown to the Government? What guarantee has the Government that the control of the *Corporation* will remain in Chinese hands, and how far will the *Corporation* be permitted to invite foreign subscriptions to its shares? It goes without saying if the National Assembly grants a Charter to a Chinese National Railway *Corporation,* that body must exist in a corporate form, with a share capital, subscribed and paid up, a Board of Directors, and Articles of Association duly registered according to Chinese law. Is it legal to confer such powers on a Commission which derives its financial support from the Government, or is it possible for such a Commission to delegate these powers to a stock corporation and capitalize the power conferred on it by the Central Government? It appears to me that there is a very important legal point involved which may arise at any time to threaten the legality and invalidate any negotiations which the present Commission may enter into for the financing or constructing of railways. This point is so important, that I believe it my duty to point out the contingencies which may arise in the future, unless some solution to the problem is found.

I accept as a fundamental fact, that Dr. Sun Yat-sen is animated solely by a patriotic desire to benefit his country, and that he has no idea of capitalizing his patriotism or accepting payment for his past services to the Republic, by a monopoly of railway franchises or concessions. In the event of any disaster to President Yuan, he would without doubt be called upon to preside temporarily at least over the destinies of his country. The natural evolution of politics in the new Republic will demand Dr. Sun as a candidate for the Presidency, in which event there is a possibility of his election. Bearing this in mind, it is well to carefully analyze the situation arising from the President's Mandate conferring on Dr. Sun the power to form a Central Railway company, and what it may lead to unless a careful program is prepared and carried out. We must assume that only the highest patriotic motives influence Dr. Sun in accepting the commission entrusted to him, and that his first idea is the welfare and progress of China.

When I was invited to join this office as Technical Secretary, I had formed the idea from the few conversations with Doctor Sun, that he hoped to finance and construct the lines of his proposed system by the sale of franchises, granting to foreign corporations the right to finance, construct and operate the lines for a term of years, after which they would revert to the government either by purchase or right, or under terms to be agreed upon with the financial syndicates. I accepted the viewpoint that Dr. Sun stood in the position of a man who had secured a monopoly of railway franchises from the government which he was at liberty to negotiate abroad on the terms most favorable to himself and China, deriving a legitimate profit from the result of these negotiations.

It was with this view in mind that I pointed out to Dr. Sun, that before foreign capitalists could be induced to finance a franchise in China, certain essential laws would have to be enacted at once. A National Railway Law and Regulations would have to be passed; the relation between the Provinces and the Central Government would have to be clearly defined in regard to their respective control over railways and inter-provincial commerce, and incorporated into the constitution of the country; the right of eminent domain would have to be enacted into a law, and its observance made compulsory by the Provincial Governments, and the Central Government would have to guarantee the lines against destruction by the people, or in other words provide ample police protection, before foreign investors would risk their money in operating a railway under their own control in China. Dr. Sun seemed to think that these obstacles could be readily surmounted, and that a National Railway Law would be drawn up.

Having in view this phase of the situation, in which the various projects could be built and operated by foreign companies under an out and out franchise, and that the profits of the company would arise from the sale of these rights, either by a lump cash sum or participation in the shares, I readily concurred in the idea of styling the Commission as the Chinese National Railway *Corporation.* For as I believed, it would be better to have a stock corporation organized for the proper manipulation of the business.

It was also with this idea in mind, that Mr. Donald and myself suggested the necessity of a charter for the company that would amplify and define its powers, and permit it full scope to operate without fear of future governmental interference, except in certain specific instances. In all this, I believe, we have taken the proper course.

I would like to point out, however, that there has been a radical change of sentiment concerning the advisability of constructing the lines under the terms of a franchise. This indicates that the people of China are not yet ready for the introduction of foreign capital for the purpose of constructing railways or other industries along the lines suggested, and the opposition to such a scheme would be so great as to render it impracticable. So in addition to the many essential laws and regulations necessary for the protection of the foreign investor, pending a change of sentiment throughout the country, the hostile attitude of the Chinese people, makes the financing and construction of railways under a franchise absolutely impracticable and impossible of realization.

If we admit there is no hope of constructing railways under a franchise, then we must relinquish the idea of conducting the affairs of Dr. Sun's Commission as a Corporation, and the necessity of a Charter is nullified. This conclusion has been forced on me after a careful consideration of the question as to how the lines can be successfully financed. I pointed out over a month ago that we were losing time speculating on schemes to finance the lines, as we would have to be guided by the attitude of the financiers, and it was necessary to ascertain just where

they stood on the proposition, and what terms, if any, they would consider as a basis for negotiation. We are still ignorant of this point, but as China is not prepared to surrender franchises to foreign capitalists, the question becomes somewhat simplified, and enables us to tread on firmer ground. If we eliminate construction by franchise, it leaves three alternate methods of financing, and to preserve the character or fiction of the *Corporation* we will consider the method that will tend to strengthen that presumption.

As a Corporation operating under a Charter from the Government, the logical procedure would be to file Articles of Association, publish a Prospectus and invite subscriptions to shares in the Corporation, so as to give it a legal commercial standing. The assets are the rights to construct the necessary railways, which can be capitalized at a low figure, with the central corporation as a holding company for the various lines to be built. Let us assume that we form a Chinese National Railway Corporation, with a capital of say $10,000,000 gold divided into 100,000 shares of $100 each. As Dr. Sun Yat-sen personally holds the Presidential Mandate and powers, he has the undoubted right to allot these shares as he sees fit. Let us assume that he retains $5,000,000 in shares for himself or his associates and invites other Chinese officials or capitalists to subscribe to the balance at their par value, thus raising the necessary funds for the prosecution of the many preliminary studies connected with the promotion of any of his separate projects. Let us further assume, that after necessary preliminary surveys and reports on a certain line have been concluded, that a subsidiary company is organized to construct the line, in which the holding company either surrenders the charter for a fixed sum in advance, or transfers its rights for a certain percentage of the shares, profits or otherwise.

Let us assume that a certain amount of Chinese capital is secured in this way, and construction work commenced, and then the company turns to the foreign banks to float an issue of bonds for the further construction of the line. Up to this point it is all clear sailing, but experience tells us that when a private Chinese industrial company endeavours to float a loan or an issue of bonds in the foreign markets, it is almost impossible unless the bondholders are assured control of the property. This the Chinese have not been disposed to grant in the past, and therefore no foreign loans have been made to private companies. Pending the establishment of a proper code of laws which will permit foreign bondholders to enter into possession of the property in case of default, there is little hope that this condition can be changed. In other words, it is impossible for a Chinese railway company to float its bonds in the foreign market *unless guaranteed by the Central Government*. There may be some foreign banks who might entertain the proposition to underwrite the bonds for the construction of a railway for the Chinese National Railway Corporation. In such a case, China would lose more than she would gain. Unless the Corporation has sufficient Chinese capital to make a good start with, the entire cost of creating the property would fall on the bondholders, and the underwriting banks would demand excessive and onerous terms, and a large percentage of the common shares as an inducement to market the bonds, in addition to supervision over accounts, employment of foreign engineer and traffic manager, and representation on the Board of Directors. It is remotely possible that some syndicate of bankers would undertake to finance the construction of a line secured by the bonds of a duly chartered and registered Chinese Railway Corporation, but it is also obvious that in such a case, the latter would have to relinquish control, and concede at least one half the shares to the foreign syndicate. While it might be justifiable under certain conditions, yet I firmly believe that such a deal would not be favorable to China, and would most certainly lead to internal trouble and ultimate cancellation of the Charter. Therefore the price is too high for what may be obtained readily on cheaper and more lenient terms.

If the bonds of a private Chinese Railway Company could be marketed abroad, it is obvious that the Chekiang, Kwangtung, Fukien, Anhui and Kiangsi Railway Companies would have long ago been successful in negotiating a construction loan. These provincial lines already have some miles of line built and in operation, and therefore have some tangible security for an issue of bonds. Especially is this so with the Chekiang and Kwangtung lines.

We must also remember the position of the Central Government on the question of Provincial loans. The Government has steadily refused to acknowledge the right of the Provinces to contract foreign railways loans, and as a consequence foreign financiers refuse to entertain overtures from the Provinces. For at least three years the Anhui, Kiangsi, Ltung, and Fukien railway companies have been hawking a loan around the commercial and financial firms of Shanghai, well knowing that the Central Government's prohibition rendered the negotiations abortive. Financiers have been willing to accept the Provincial guarantees to railway bonds, providing that the Central Government gave its indorsement or super-guarantee. The Central Government has maintained the position that it would not extend its credit to the Provinces without control of the railways, and as the Provinces could not or would not accede to this, a deadlock has been created. I believe then, that although there is a remote possibility of floating the bonds of a Chinese Railway Company, the terms would be such that the immediate benefits would go to the foreign bondholders and the bankers underwriting the bonds, and as they would insist on control and representation on the Directorate, the profits which otherwise might be expected to accrue to shareholders would probably be diverted to betterments of the line, and other expenses, for as long a period as possible.

The above assumption is based on what might be termed a joint Chinese and Foreign stock company, in which the Chinese provide the franchise, and the Foreigners the money. To raise the funds by an issue of bonds, the Chinese company must surrender a large percentage of the common shares, probably one half, and accept about 80 to 85% for the bonds, or perhaps less. In other words, to obtain the financing of a railway for the Chinese National Railway Corporation, the latter would have to admit foreigners to an equal share in the ownership of the line, and divide the profits with them. If the Government can negotiate a loan at 90 to 95 at 5% for the construction of railways which remain under Chinese control, or obtain the same result by guaranteeing the bonds of a private or provincial Chinese railway company, is it wise to surrender these advantages by financing the lines in the manner outlined? Aside from the fact that the scheme is almost impracticable, and that few, if any, foreign syndicates would entertain the proposition, it is doubtful whether the present sentiment of the Chinese people would favor such a solution. So, if we eliminate the possibility of financing the lines by the sale of franchises, and admit the difficulties surrounding the flotation of a bond issue by a private Chinese railway company, we are compelled to fall back on the only two remaining lines of action open to the Commission. These facts must be carefully weighed and considered, for if we once accept their soundness, it follows as a natural sequence that the powers of Dr. Sun will have to be limited to the functions of a Government Commission. The only other avenues open for the financing and construction of railways are by a direct government loan or by a government guarantee on the bonds of a private or semi official organization, or by the super-guarantee of the Central Government to the bonds of a Provincial or Municipal Government.

As we must accept the fundamental principle that Dr. Sun is inspired by the loftiest motives, and is not seeking personal gain, it is of course impossible to suppose that a government loan can be floated for the construction of a railway, to remain under Dr. Sun's private control or the control of his company. Therefore if it should be necessary to construct any of Dr. Sun's lines under the provisions of a Government loan, the line must be immediately turned over to the Government. As the Director General of a chartered commercial corporation, Dr. Sun could not legally enter into negotiations involving a government loan, even though it was so specified in the Charter, without special authorization to do so in each and every instance, and then only as the agent or intermediary for the Government. Let us assume that the Charter of the so-called Corporation concedes the right to negotiate a government loan for the construction of a railway, it is clear that Dr. Sun could not commit the Government to any such step without special sanction beforehand, and the final

terms of the loan subjected to confirmation by the National Assembly. In other words, it would be impossible for Dr. Sun as Director-General of a private *Corporation* to initiate negotiations for a Government loan for the construction of a railway, except as a special agent of the government, acting under certain well defined instructions.

If we admit the point, that Dr. Sun cannot negotiate a foreign railway loan on his own initiative, or that if Government sanction is given that the line thus financed, must come immediately under government jurisdiction, we must also accept the point that Dr. Sun is in reality a Special Commissioner of the Central Government, delegated to conduct such negotiations, subject to its instructions and approval. If we also admit the point that a government loan may become necessary to provide funds for the construction of certain of the lines suggested by Dr. Sun, the question naturally arises, how can it be carried out by Dr. Sun without recognizing the points already outlined? The natural and obvious answer is, that if a government loan is necessary, the negotiations should be conducted by the Government direct, dispensing with the services of Dr. Sun.

Under normal political conditions this would be the correct position to assume, but the conditions surrounding the financing and construction of railways in China, are extraordinary, and find no parallel in other countries. I am therefore of the opinion that the Central Government can profitably utilize the services of Dr. Sun Yat-sen, in the future negotiation of railway loans, to establish a new and more favorable set of terms, and create a new precedent.

The history of past railway loans to China is more or less familiar, as is also the hard up-hill fight that China has made to secure the most favorable terms, and establish her right to expend the funds without supervision. The history of these negotiations is sufficient evidence of the hold certain financial institutions exercise over China's railway loans. By a combination of circumstances, China was compelled to confine the negotiations for railway loans to certain approved foreign financial institutions, indicated by their respective governments as having a monopoly of official support. It must also be kept in mind that all railways in China constructed by foreign loans, were the outcome of direct concessions extracted from China in the years 1897 to 1900, when China was ignorant of their value. Political pressure secured these concessions for the foreign financial institutions, and foreign Governments exercised their power to maintain a clear field for the favored corporations. Thus China has been compelled to restrict her past railway loan negotiations to a very limited circle of financiers, and the latter, free from the menace of competition, exacted their own terms. China has however secured more and more favorable terms in each succeeding transaction, until in the Hukwang Agreement, the limit of concessions on the part of the financiers seems to have been reached.

There are still some objectionable features in foreign railway loan agreements, and in my opinion China should continue to hold out for the elimination of all unnecessary clauses, until a railway loan is recognized and accepted as a purely financial proposition, without the injection of any clauses restricting her freedom of action in any way. The loan should be secured on the physical property and earnings of the line, covered by a guarantee of the general revenue and good faith of the government.

Especially is it important that all references to the purchasing of materials be omitted, and China be permitted to purchase supplies in the cheapest market. Also that the customary five per cent purchasing commission to the banks be abolished in all future loans. This purchasing commission is in reality an extra bonus to the underwriting banks, for which they give no adequate service in return, and which might be more advantageously expressed in an extra point or half point commission. We may take the case of the Hukwang Loan as an example. The ultimate cost of the line will approximate say $60,000,000 gold of which at least $25,000,000 will be expended for the purchase of materials abroad, and on which the Banks will receive a "Purchasing Commission" of 5% or a total of $1,250,000 gold, and this notwithstanding all large tenders and purchases are to be made only by the order of and through the Chinese Managing Director. This sum spread over a period of four years, will equal $312,500 gold per annum or say Tls. 500,000 which could be employed in paying the interest on the loan. In other words the bonus to the Banks, expressed as Purchasing Commission, is roughly equivalent to 2% on the amount of the loan. As the Banks are now accustomed to this extra bonus they will desire the same terms in all future loans. Would it not be better to concede the underwriting banks an extra ½ or even 1 per cent commission in the flotation of the loan, and have them waive the 5% bonus, disguised as a purchasing commission? China would then be free to purchase her material in the cheapest market, and by establishing her own central purchasing department under control of the Director-General of Railways, she would save at least another 2% on the cost of materials purchased abroad. I consider this question as one of the few remaining points to be adjusted in China's favor in future railway loans.

Now the point to be carefully considered is this: The agreement between the official banks known as the Sextuple Group, covers all government loans, and may therefore be extended to include the next railway loan. In such a case the Government may find it difficult to negotiate a new set of terms with the official groups.

The creation of Dr. Sun's railway office or Commission, however, offers a loop hole to avoid the necessity of dealing with the Sextuple group, and of negotiating a national railway loan with independent bankers who might be more inclined to accept new conditions. The time is propitious for the establishment of new terms in railway loans. Heretofore all lines constructed from the proceeds of a foreign loan, may aptly be termed "concession" roads, in which China had no other option than to deal with the recognized official groups. The signing of the Loan agreement for the Lanchow Extension of the Pienlo Railway with the Belgians, leaves the Sinpu concession (held by the British and Chinese Corporation), the Japanese extension to the Kirin Line, and the promise to Germany for the financing of the short sections between the Tientsin-Pukow and Peking-Hankow railways as the only other existing compromises, after which China will be liberated from the influence of the "concession" period and of compulsory dealing with the official groups. For the construction of all other lines China is free to approach other financiers. A new era in railway construction has therefore commenced and China should exert every effort to secure the elimination of all unnecessary clauses to future railway Loan Agreements.

I am also of the opinion that future railway loans should be secured on the physical property and revenue of the lines, with the guarantee of the general revenue of the country, and that no specific Provincial or other revenues should be allocated as additional or collateral guarantee. I am aware that the allocation of Provincial revenues was made in response to public sentiment in order to avoid the hypothecation of the line itself, and its possible management by the bondholders in the event of default. After all, the allocation of this or that revenue, or the hypothecation of the line itself, amounts to the same thing, if the good faith of the Government is taken into consideration. The same reasons as were advanced to shift the security from the physical property of the line to a Provincial revenue, to avoid the possibility of a demand for foreclosure in the event of default, might also be applied to the provincial or other revenue with the same force and reason. In fact, the same question has lately arisen in connection with the control of the Salt Gabelle. The entire problem of security is solely a matter of good faith on the part of the Government, and now that an annual budget is to be drawn up, and revenues and expenditures accurately recorded, there should be no further necessity for the allocation of special revenues as a super-guarantee to a perfectly sound railway loan secured on the property and earnings of the line and covered by the general credit of the Government. The consequences of this policy are probably keenly felt by the new administration in its financial difficulties, as many productive sources of internal revenue are allocated to the service of sound railway loans, when they might have been profitably employed at this time, as security for necessary loans for the reorganization expenses of the government.

I am therefore of the opinion that now is the time to initiate new railway loan terms, and I am furthermore convinced that

these terms could be more successfully arranged through the medium of Dr. Sun's offices than through the regular channels at Peking. First because at Peking, these negotiations would have to be made through some financial intermediary who would expect the customary brokerage fee for his services, thus nullifying the advantages gained by the abolition of the purchasing commission. If a brokerage or promoter's fee or commission is included, this could be returned to the government or form a fund for the maintenance of Dr. Sun's office and staff.

I believe that the best results would be secured by empowering a special deputy to proceed abroad, and open negotiations with independent bankers for the object of furnishing a railway loan based on these terms, and, when the preliminaries are settled, Dr. Sun could come in person, and with full powers from the government, sign the final papers in the name of the Chinese National Railway Corporation. As the corporation is in reality only a Commission deriving its powers from the Government, and Dr. Sun as Director General of the Corporation is in reality representing the Government, I believe that much greater headway can be made, better terms secured, and the payment of all commissions avoided. This appears to me the only legitimate way in which Dr. Sun can engage in the negotiation of a government loan for the construction of any of his projected lines. As the various amendments to the Charter of the Corporation virtually annul its independence of action, and make the organization subsidiary to the government, the foregoing expression of Dr. Sun's position, is in direct harmony with the spirit of the amended Charter.

As I have outlined Dr. Sun's relation to the Central Government in the question of government loans, there remains only one other scheme under which railways can be financed, and that is by the government guarantee of interest on the capital or bonds of a semi-official or private company. When capital is raised in this manner the transaction partakes of the character of a government loan, but subject to a somewhat higher rate of interest. The difference between a loan and a guarantee is that in the former the national credit is pledged unconditionally, and the lender need have little concern as to the character of the work for which it is used, unless the works are pledged as collateral security, while a government guarantee of interest on the bonds of a private or semi-official company, will not secure the acceptance of as low a rate of interest as a government loan. Although the Chinese government may be able to secure all the money it requires at five per cent interest, it may be necessary to offer a guaranteed interest of 5½ to 6 per cent to market the bonds of a private or semi-official company. Therefore a government who can borrow money at a low rate of interest will find it more advantageous to do so, rather than pledge its credit indiscriminately in guarantees to privately controlled companies. The situation in China is however so complex and the construction of railways by a direct government loan surrounded by so many conditions, that the national guarantee of interest to the bonds of a semi-official company, would appear to be one way to solve the problem of future railway finance, and Dr. Sun's corporation would then justify its existence as the instrument through which the line may be constructed.

As the Chinese National Railway Corporation as at present constituted is in reality a Commission appointed by the government, the latter could not guarantee the bonds of this organization without creating great opposition throughout the country, for once the government credit is extended to the bonds of Dr. Sun's organization, the provincial and other companies will demand the same facilities.

Many provincial railway companies having the guarantee of the Provincial governments have unsuccessfully tried to secure this assistance from the Central Government in the past, and if Dr. Sun's Company is singled out as the sole beneficiary of the government's credit the other companies will have legitimate grounds for complaint. Owing to the present condition of China's finances, and the difficulties attending the floating of any large loan for railway construction, I believe that a government guarantee of bonds is one solution of the problem, providing always, that due care and discretion is observed in extending this credit to such lines as will be most likely to meet the guarantee of interest from their earnings. It goes without saying that a loan for the construction of 1,000 miles of railways approximating $50,000,000 gold, would be difficult to float at the present time, at terms satisfactory to China. The same object could be secured however, without adding directly to the national debt, by a guarantee of interest on the bonds of a company controlling the rights to construct certain well selected and profitable projects. Instead of binding the government to the construction of a single 1,000 mile trunk line, the initial sections of several trunk lines could be commenced, and pushed through to completion without any strain on the national finances.

Where such lines are within the jurisdiction of the Central Government the latter could utilize Dr. Sun's organization or semi-official company, as the operating company whose bonds would be guaranteed by the government. After the interest on the bonds and other fixed charges are met from the earnings, the surplus profits would revert to the government, minus a small percentage for the maintenance of Dr. Sun's central organization. In other words, the Chinese National Railway Corporation would be the instrument through which the Central Government could readily finance certain guaranteed railways without resorting to a direct loan, and at the same time retain all its powers, and receive all the profits. As a matter of fact the lines so constructed could remain under the actual control or administration of the Railway Board through duly appointed officials, while nominally the control would be vested in the Chinese National Railway Corporation.

In this way the existence of Dr. Sun's Commission as a corporation, could be justified and employed to the advantage of the Government. I am of the opinion however that there is still another line of activity open for the utilization of Dr. Sun's organization in the advancement of China's railway program, one which will harmonize the interests of the Central Government with the Provinces, and lead to a hearty co-operation of all concerned in the development of the country.

There are many private companies holding Provincial concessions recognized by the Central Government, but, owing to their inability to raise the requisite capital within the country, and the refusal of the Central Government to guarantee the bonds of these companies unless assured control of the line, and the disinclination of the companies to cede this last point, a deadlock has been created which neither side seems inclined to break. Naturally so long as these conditions last, no advance can be made, and a solution to the question is therefore imperative for the general welfare of the country.

Here is where the services of Dr. Sun and the semi-official Chinese National Railway Corporation can be utilized for the best interests of the entire country.

My idea is that the Chinese National Railway Corporation either as a government department or as a chartered company, under control of the government, should act as the operating company, for the issuance of bonds to construct the lines, under the guarantee of the provincial authorities and the indorsement or super-guarantee of the Central Government. After the line is built it would be operated under the joint control of the Provincial and Central authorities, working in conjunction with the Chinese National Railway Corporation. After the interest on the bonds and other fixed charges are annually provided from revenue, the profits of the line to be divided between the provincial and central governments, the Chinese National Railway Corporation as the operating company, retaining a small stipulated commission for the maintenance of its central office.

As a concrete example let us assume the following conditions:—It is proposed to construct a railway line from Canton to Wuchow in the government of the Liang Kwang. It is impossible for the people to raise the necessary share capital locally, and although the Provincial authorities may be willing to guarantee a loan for construction, the Central Government refuses assent to this method, and, although foreign financiers would gladly advance the funds on the strength of the Central Government guarantee to the provincial loan, the latter still refuses to give its credit unless it is assured control. As neither side will cede, the much needed railway remains on paper,

the progress and development of the country is checked, and mutual distrust and discord is engendered, which bodes ill for internal peace.

Now my solution to the problem is this. Let the Chinese National Railway Corporation take over the scheme, and act as the operating company to facilitate negotiations for the financing and construction of the line. The Government of the Liang Kwang will guarantee the principal and interest of 5½ per cent on the bonds of the Chinese National Railway Corporation. As this guarantee is inadequate for successful flotation the Government of the Republic of China will indorse the guarantee of the Liang Kwang Government. This insures a ready acceptance of the bonds at the most favorable terms.

This seems to be a fair division of responsibility. We will now consider the other sides to the question.

Naturally the foreign financial syndicate will require some guarantee that the funds will be properly expended and that the line will be constructed within certain specifications. To avoid all unnecessary and possibly obnoxious terms and conditions I believe that the safest course for the protection of both sides is to construct and equip the line under a fixed contract price per mile, with some highly reputable and competent foreign construction firm, who would give a bond for the faithful performance of the work within a specified time. Such a construction firm would also be willing to take their payment in the guaranteed bonds, and finance the lines as needed. This would liberate China from any of the previous obnoxious clauses in loan agreements, save purchasing and other commissions, and insure the construction of the line within a reasonable figure. It will be remembered that a British construction firm agreed to construct the Chinchow-Aigun line at a flat rate of $40,000 gold per mile, and it is evident that this figure provided for a fair profit. In other words, economical railways can be built in China on easy country at an average of $30,000 gold per mile, even under foreign supervision. If we assume that the guaranteed line from Canton to Wuchow is constructed under contract at a fixed rate, we have a definite idea of the exact cost, without fear of additional issues of bonds to make up for the possible errors or extravagance in loan constructed lines.

As the line is built, it is turned over to the Chinese National Railway Corporation for working. The operation of the line would be entrusted to a Board of three Directors, representing the Central Government, the Province and the Chinese National Railway Corporation. After the interest on the bonds, and the sinking fund had been set aside from revenues, the surplus profits, if any, would be divided equally between the Central and the Provincial Governments, minus a certain percentage or fixed sum to be mutually agreed upon for the services of the Chinese National Railway Corporation as the nominal operating or holding Company.

The adoption of the above method would be equitable to all parties and remove certain obstacles to China's railway development. The Chinese National Railway Corporation would then justify its name, and be in actuality a true National organization, having only the best interests of the country at heart. Ministers could come and Ministers could go, but the Corporation could continue its existence outside the field of active politics, and insure the continuity of a fixed railway policy, and stand as a buffer or mediator between the Central and Provincial authorities, guaranteeing to each their respective rights and participation in the development of railways and the profits accruing therefrom. Such an arrangement would also prove acceptable to foreign financial syndicates.

It is obvious that such a scheme applied to the construction of several necessary short lines would be more advantageous and of greater immediate benefit to the country than by adhering to the old system of contracting a large loan for the construction of one large trunk line. I would suggest that instead of contracting any further large loan for the construction of a through trunk line, the necessary arrangements be made for the Chinese National Railway Corporation to finance, under the joint guarantee of the Central and Provincial Governments the construction of several sections of the projected trunk systems, and, as each section is completed, the extensions can then be financed either under a continuance of the guarantee system, or by bonding the completed sections or the surplus revenues of existing profitable lines, to raise funds for the extensions.

For example, instead of incurring a large government loan for a 1,000 mile trunk line from Canton to Chengtu, or from Hankow to Yunnanfu, which would take at least five to six years to construct, let the government undertake the construction of the first sections of several trunk lines, and finance them independently under a guarantee on the bonds of the Chinese National Railway Corporation. This might take the form of the following lines:—

Samshui to Wuchow	100 miles.
Wuchow to Kweilin	145 „
Foochow (Port) to Yenping	100 „
Hankow to Siangyangfu	175 „
Chengteh to Yuanchow	185 „
Nanchang to Kanchow	205 „
	910 miles.

Here we have a total mileage of 910 miles of railways comprising the initial sections of several essential trunk lines. Is it not better to start these several lines at once, and follow out a definite program for their completion than to build each large trunk system separately from the proceeds of a large general loan? It will be noted that the terminii of these lines are accessible for the delivery of materials to enable the commencement of work at once. Instead of concentrating construction to any one section of the country and straining the national credit for the benefit of this particular through line, and delaying the progress of other provinces, it is not better to extend the national credit so that the benefits will be more equally distributed?

If a government loan was floated to construct the above mileage, it would approximate $40,000,000 gold and under existing political conditions, the negotiations might have to be confined to the Sextuple Syndicate, with a repetition of past terms and the additional " bonus " disguised as a purchasing commission. On the other hand, by splitting this mileage into short sections of guaranteed lines, the longest not exceeding 200 miles, at a construction cost of say $40,000 per mile or a total of $8,000,000, it makes possible a large competition among the smaller bankers, many of whom would be glad to compete for a small issue of $4,000,000 to $8,000,000 spread over a period of say two or three years. There are many banks, or construction corporations whose independent resources would permit them to compete for the underwriting of such a loan or to take up the construction and accept payment in bonds, whereas a large loan of $25,000,000 or more would be restricted to the more important banks, most of which are either a part of or allied with the Sextuple syndicate.

If we accept the above mentioned sections as the necessary expression of certain essential trunk lines, and assuming that such a scheme meets with the approval of the central and provincial authorities, it only remains for the different provinces after a careful study, to give the consent and guarantee to the necessary bonds. The Liang Kwang Government would be called upon to guarantee the interest on the bonds of the Samshui, Wuchow and Wuchow-Kweilin lines, a total of 245 miles which would cost under contract say $40,000 gold per mile or a total of $9,800,000. If we assume the bonds are marked at 90, with 5 points commission to the Bankers, it would require a total of about $11,500,000 for finance and construction, and a 5½ per cent guarantee would call for $632,500 gold for the annual service of the loan, plus the sinking fund after say five years. Even if we assume that the line would not pay this sum, it would not unduly strain the resources of these two rich provinces, or the central government. I feel confident however that at this capitalization such a line would soon pay 10 per cent on the combined passenger and freight traffic, providing of course that the line is under efficient management and the cost of operation is kept down to at least 50 per cent of the gross earnings.

This would provide for the annual guarantee and other fixed charges, and leave a probable surplus to be divided between the Provincial and Central Governments in such proportion as may be mutually agreed upon.

The above scheme may also be applied to the other suggested lines. After the first sections are constructed and in profitable operation they will serve as the security to finance the future extensions without any further strain on the provincial revenues.

Respectfully,

GEO. BRONSON REA,
Technical Secretary.

Shanghai, December 20th, 1912.

THE INDUSTRIAL OPPORTUNITIES OF CHINA

By Arthur J. Moore-Bennett. C.E.F.R.G.S.

China by reason of her great size, her undeveloped industrial condition, her industrious and highly intelligent population, her vast potential mineral and agricultural resources, offers to the capitalist seeking a remunerative outlet for financial and creative effort a greater opportunity than any area of equal size in the world, and it is intended in this article to show that of the seventy-three million pounds worth of manufactured goods imported in 1912, China could by reason of her almost untouched supplies of raw material, cheap and efficient labour, in conjunction with modern plants, manufacture at least 50% of the goods she now imports, cheaper than any other country in the world, and if her industrial, mineral, and commercial law was put on a basis with that of other modern commercial powers she could so build up her industrial power, that she could provide the greater part of the East with all the manufactures now imported from Europe and America, and at the same time strengthen her financial and political position, as she could in no other possible way.

To treat China as one country is difficult in the face of the multitude of different climatic conditions, races, languages, products, trade and transportation conditions involved, but as all official figures for her trade are issued for China as a whole and as it is impossible to trace imports after they have left treaty ports, the writer will endeavour on broad lines to show the chief openings that exist for manufacturing goods in every day demand throughout the country.

The following list of articles imported during the year 1912 shows only that proportion of the total imports which could better and more cheaply be manufactured at the point of demand than elsewhere (and does not include any of the articles that are now manufactured crudely for the most part within the country for domestic use), if only for the reason that Chinese labour is on the whole less costly and less subject to strike methods than that of any equally efficient labour in the world.

Cotton Yarns	132,100 tons	value	£8,800,000
Shirtings	10,841,000 pieces	„	£5,850,000
Woollen Goods.		„	£500,000
Brass & Yellow Metal	950 tons	„	66,000
Copper & Copper ware	7,166 tons	„	528,000
Iron, Ironware, & Mild steel	126,800 tons	„	939,500
Lead & Lead Ware	6,020 tons	„	99,315
Steel (rope, bar, plates, tool, cast, etc.)	5,690 tons	„	76,110
Tin Slab.	2,800 tons	„	235,500
Tinned Plates	20,450 tons	„	329,000
Buttons, Brass and fancy	918,000 gross	„	455,000
Cigarettes	4,339,782,000	„	£1,200,000
Coal	1,516,000 tons	„	£1,212,000
Electrical fittings		„	245,000
Enamel ware		„	106,500
Flour	188,500 tons	„	£1,900,000
Glass (window)	205,647 boxes	„	96,000
Machinery (not including sewing machines)		„	781,000
Matches	30,000,000 gross	„	£1,047,500
Paper	28,400 tons	„	518,000
Railway Plant & material (Locos carriages, wagons)		„	555,500
Safes and strong room doors		„	11,480
Looking glasses & Mirrors		„	36,500
Hosiery	1,345,595 dozs.	„	184,600
Leather	5,454 tons	„	961,978
Leather (manufactured)		„	58,500
Soap		„	345,000
Stationery		„	138,000
Sugar (refined)	101,075 tons	„	£1,484,500
Tools (hand)		„	31,000
Umbrellas (European)	552,000 pieces	„	54,500
Paint	3,750 tons	„	106,500

These items must be divided into categories, the first, containing those items whose successful manufacture depends either part or wholly on individual enterprise, and the second, containing those items which cannot be successfully manufactured unless the industries are helped and fostered by the Central and Provincial governments.

In the first list matches, clothing, sugar, paper, small brass, copper, lead and other metal ware, small machinery, boots, leather and leather ware, glass, soap, stationery, umbrellas, paints, and chemical products (when such do not depend on minerals for their production) may be placed, whilst in the second list, cotton, wool, iron, steel and coal products, copper, lead, tin, antimony, tungsten, spelter and their allied products and manufactures must be placed, as the source of supply of raw material and manufacture depend wholly on whether the Government in conjunction with capitalistic effort will agree to consider schemes of mining, cotton growing, wool rearing, and general economic development, and will give such schemes their whole hearted support by enacting laws which will allow foreigners to employ Chinese labour and assistance in opening up and laying a solid foundation for the industrial welfare of the republic.

On this industrial development China's future must lie, and if the government persists in its old time conservatism and fear of diplomatic consequences arising out of granting working privileges to foreign capitalists, little will be accomplished, but as China now possesses in the persons of His Excellency Yuan Shih-Kai, and several of his ministers, men capable of realizing the necessity for helping China to help herself to take the place amongst the nations her people and resources merit, it is to be hoped that some real concrete efforts may be made to this end.

At this period of European history it is especially essential that China should no longer depend on loans, secret agreements, and all the unsound economic means used by the old regime in the past, as a means of supporting herself, as she must realize that all the available capital of Europe will for many years be too much in demand at home to be loaned to her except on terms which will preclude all hope of sound finance.

The chief requisites to manufacturing on a successful scale are (a) Power, (b) Labour, (c) Nearness to market and transport facilities, for raw material to and finished articles from the place of manufacture.

Taking these in their order, China is for the most part amply provided with water power, especially so in the provinces of Kwangsi, Kwangtung, Yunnan, Szechuan, Kweichou, Kansu, and Hunan, whilst in a lesser degree the North Eastern provinces could be made to yield all the power required for some centuries of industrial development. Of the most notable falls in the country those of the Pa Ta Ho in Yunnan are estimated to be capable of producing from 1,500,000 HP to 2,000,000 H.P.; the T'ung Ho in Szechuan of 500,000 to 750,000 H.P.; the Fu-Chiang of 250,000 to 350,000 H. P.; the Heng Chiang of 750,000 to one million H. P., and the Chengtu plain branches of the Yangtze from 1,500,000-2,000,000 H.P.

In Kansu the various streams entering the Hwang Ho both above and below Lan Chow-Fu are alone capable of providing all the power required by industrial Northern China for some generations, and Shensi has sufficient power in the tributaries of the same river which rise in this province. In Kwangsi the head waters of the West river and the Hungshui rising at elevations of over 6,000 ft. are capable of enormous development, and the same is true of the Wu-Kiang river in Kweichou, whilst several of the streams flowing south in Kwangtung, properly handled could be expected to yield from 150,000 to 250,000 H.P. Taking advantage of these great natural sources of power and using them as hydro-electric units, a distribution of power could be obtained unrivalled elsewhere in the world, sufficient to maintain tractive power for the greatest railway organization likely to exist at any time, and of furnishing light and power to every Fu, Hsien, and Ting city in the adjacent districts.

Coal as fuel for steam power and smelting is found in practically every corner of China from Manchuria to Yunnan and although little is used industrially, yet as domestic fuel it is worked in Yunnan, Szechuan, Kwangsi, Kweichou and Kansu and in other provinces it is worked both for smelting and fuel; the total yield of anthracite for 1912 being estimated at 6,350,000 tons, bituminous 6,100,000 tons and lignite 1,300,000 tons. Lastly natural gas is present in quantities in Szechuan and is at present used largely to evaporate salt from brine at the wells.

LABOR

In a country so large as China it is impossible to give hard and fast statements on this item, but for the most part labor is to be had in good quantity, at all periods, and is docile, industrious, and loyal. On the coast where contact has been established between Chinese and Foreigners for many years, the percentage of foreign taught labor is high, and prices are demanded unknown in the interior, but even in the larger cities coolie labor is seldom worth more than eight dollars (silver) per month, whilst in the interior, four to six dollars without food is the usual unskilled wage.

A larger percentage of the population is highly skilled in masonry, carpentry, iron founding, plastering, woodcarving, brass and copper working, and the Chinese conception of mining, and under skilled European training the Chinese develop into most capable laborers, whilst such of them as have been trained in the various coastal dockyards have proved themselves the equal of any labor in the world.

The Cantonese especially are distinguished for their high ability in all forms of iron and metal work, and excel when trained as lathemen, fitters, etc., the only draw back, common to most Southern races, being their intense excitability.

In the erection of buildings of all description the Chinese excel as is proven by the fact that most of the European buildings in the treaty ports are built by Chinese contractors.

Although labor unions are unknown as such, guilds take their place, but as a general rule they exercise no detrimental influence on ordinary labor, which, provided it is handled fairly and none of its peculiar customs and manners infringed, can be made into as great and useful a community as any in the world.

Skilled labor is usually worked on contract, or piecework, but the wages of carpenters, bricklayers, masons, metal workers, bridgebuilders, engineers, fitters, and those in kindred trades, vary from ten silver to twenty-five silver dollars per month for twenty-eight days of ten to twelve hours per day, in the greater part of the country.

TRANSPORTATION

At present China's railway system is for the most part projected only and consists of 5,980 miles open and 2,100 in course of construction; and

so far as is now indicated Hankow would seem to be designed to become the chief distributing centre and junction point of the Republic.

What China lacks in Railway facilities, however, is compensated for in some measure by her vast riverine means of communication, most of which is capable of vast expansion if river conservation and dredging works were entered on in an intelligent manner.

Hankow, the terminus of the Peking-Hankow, the Canton-Hankow, and the Yunnan-Chungking-Ichang-Hankow lines, and of the projected Hsingyi-Changsha-Hankow system, lies on the north bank of the Yangtze about 600 miles from its mouth, and affords natural navigation facilities for ocean going steamers up to this point.

The railway lines built and building afford transportation over some 2,480 miles, and the river navigation for all classes of boats up and down the river for another 1,500, while if the Yunnan-Chungking-Ichang line ever assumes to tangible shape another 1,200 miles of line into the Western mineral provinces, discharging at Hankow, will render the position of this port the most important of any in China.

By reason of the proximity of the Wu-Chang coal fields, the Ying-cheng iron deposits and spelter mines, and the Chienshi copper fields, all of which are in Hupeh province, besides the coal, iron, silver, lead, copper, sulphur, antimony, and realgar deposits of Hunan province, Hankow and district is admirably suited for the establishment of metal working, smelting and mining operations of all kinds, there being at present only seven smelting works established, four for antimony, and the balance for iron, the largest being the Hanyang iron works, which is chiefly devoted to the production of railway steel, and kindred products.

In agricultural products, Hankow is the distributing point for an enormous hinterland, and hides, horns, bone, ivory, oil seeds, wheat, pelts and many vegetable and animal products are available here in the raw state, and are at present exported, whilst cotton twist, cotton piece goods, tea, paper, ironware, soap, needles, matches, machinery, fuel oil, cigarettes, buttons, braid, looking glasses, leather, woollen goods, hosiery, and refined sugar are imported.

After Hankow, the next most important and efficient site for development would seem to be Canton, as this city is on an important waterway, which if dredged would give ocean steaming facilities up to Whampoa, besides which it will be one of the terminals of the Canton-Hankow Railway and it is connected with Hongkong by the Canton-Kowloon line. The West, Pearl, and North rivers afford transport to Kwangsi, and the interior points of Kwangtung, whilst the falls above navigable points on all three rivers, would yield all the power required for the industrial development of the area. The coal fields on the Pearl and West rivers are capable of supplying fuel for smelting and steaming, and the enormous iron deposits of Hsin-hui-hsien and Yang-an-hsien already produce pig iron to the amount of £65,000 per annum, and under European management would give Southwest China all the iron, steel, and allied products needed. In addition to the very numerous coal, iron, lime, and soda deposits on their lines of communication, Kwangtung and Kwangsi have valuable deposits of copper, lead, tin, silver, antimony, bismuth, and other economic metals and minerals some of which are now being worked in Chinese fashion but none of which pay to any extent under the present lack of efficiency in knowledge and appliances.

Besides the potential value of her mineral products, Canton is the centre of the S.W. Silk zone of China, and her exports of this product total 25½ per cent of the total Chinese export which amounted in 1912 to £14,283,578, there being 180 modern silk filature plants in operation in Kwangtung province alone.

Sugar, ground nuts, and ground nut oil, grass cloth, matting, paper soap, tea, hemp, indigo, nutgalls, tea oil, wood oil, aniseed, and hides are all produced and exported from the two Kwang provinces, and native factories producing canned fruits, cement and brick, aerated waters, steam engines and fittings, electric light and power, furniture, glass, leather, matches, paper, cigarettes, etc., exist, but by no means cope with the demand for manufactured goods.

In ocean freight services Canton by reason of its proximity to Hongkong has access to the best freight and mail service in the world, and this fact coupled with the native skill of its population of over a million workers, should tend to make this port second only to Hankow in industrial and commercial importance.

Shanghai, in spite of the fact that to-day it ranks first amongst the ports of China in value of its imports and exports, is not so well adapted either by geographical, geological, or distributing facilities for first rank amongst the industrial and manufacturing centers as either Hankow or Canton, and it owes its importance to-day solely on account of the Foreign settlements and industries which must in time when China ranks as a great industrial power lose a great measure of their importance. Kiangsu as a province has few important mineral deposits, and Nanking has all the facilities that Shanghai possesses in the way of transportation, and in addition has valuable iron deposits, which must tend to make the region possessing them of greater value than a mere port.

After the centers already mentioned Tsingtau, by reason of its port facilities, and the railway system at its back, its mineral deposits of coal at Weihsien and Poshan, iron at Kiulingchen, copper and galena at Chaoyuan and districts, alum, gypsum, soda, etc., its cotton, silk, bean oil, ground nut oil, bristles, hides and other products coupled with its healthy situation should speedily come to the fore under fair industrial laws and conditions, as should in a lesser degree Chungking in Szechuan, Newchwang in Fengtien, Nanningfu in Kwangsi, Mengtze in Yunnan, and Changsha in Hunan.

Tientsin might become a center of woollen manufacture and perhaps of cotton, but its climate is against this last, and its port facilities not likely to be much improved.

TEXTILES AND COTTON

Taking the main items of China's needs, the raw material of which are to hand, or could be grown provided the government would afford its aid to the industry, piece goods, cotton twist and allied textiles come easily first in point of value. In 1912 China imported a total value of £21,850,000 of these goods and during the same period is credited with having grown 310,000 tons of native cotton, although this figure must be accepted with caution.

Cotton is grown, or has been grown in Shantung, Chekiang, Honan, Hupeh, Kwangtung, Kwangsi, Szechuan and Kiangsi, but little science enters into the cultivation, and little has been done either to suit the seed to the soil, or to improve the length of staple, or to take advantage of any of the improvements in seed and cultivation brought to light in recent years in India and elsewhere. The present highest average yield per acre is stated by one authority to be 176 lbs. cleaned or 490 lbs. seed cotton, but this figure does not represent the true average value of an acre of cotton over ALL CHINA. In the lower valleys of the rivers in the western plateau cotton is grown extensively mostly by the tribes people, Shans, Lolos, etc. and the average yield there does not exceed 50 lb. an acre, altho the soil is eminently adapted for the purpose. The original seed which was distributed some fifty years ago by the Catholic missions, has grown impoverished for want of renewal.

From careful estimates made in the South-western provinces by the writer it would seem that there is an acreage of about nine million available for the cultivation of cotton, and if irrigation was employed this might perhaps increase to eleven million acres, whilst in the Yangtze provinces and Shantung there is according to the Minister of Agriculture some 16 million acres under cultivation, so that in nine provinces there would appear to be about twenty-six millions of acres, which if properly cultivated, should yield at least 1,529,500 tons of cotton per annum, enough at least to provide China with all the coarser counts of twist, drills, shirtings, jeans, unbleached and other of the cheaper grades of piece goods now imported.

Whilst it is not feasible for China to manufacture the finer counts, she certainly should be able to manufacture those goods enumerated which she now imports to the amount of £13,500,000 per annum, as the climate is humid enough, her work people and labour plentiful and cheap enough, and her natural facilities are adaptable enough as are her cultivators capable to overcome all initial difficulties always provided the government would make industrial laws to foster the growing and manufacture.

Taking the import duty at an average of 3% of the ad. val. of the imported goods which could be manufactured it will be seen that this amount alone equals over 65% of the total central government receipts for the first six months of 1913, and in view of the fact that foreign operatives in America, Britain, and in a lesser degree in Japan and India, obtain greater wages in proportion to output than would be necessary to pay Chinese operatives, the loss of this source of revenue is serious to a country whose whole future rests on its economic industrial expansion.

Hongkong and Shanghai possess cotton spinning works, but depend on imported raw cotton for the bulk of their output, and no organized effort has so far been made to develop the native industry as it deserves. A quantity of coarse cloth made of imported and home made twist in about equal quantities is made in nearly every province in the republic, on wooden looms worked by hand, the output of each loom averaging about three yards per hour of material averaging 23 inches in width, but the appliances for ginning, spinning, and weaving are of the crudest nature possible, and whilst there are 38 Chinese and seven foreign owned spinning and weaving works, now in operation, these turn out hardly 15% of the total cotton manufactured in the country.

Printed goods as well as plain cottons are made by hand in many provinces and on crude cotton printing machines, usually second hand Japanese cast presses, but taking China as a whole no effort has been made to use the natural cleverness of the people or to give them machinery or methods commensurate with the need.

Hankow, Tsingtau, Canton, and Hangchow are especially indicated for forming centers of textile industries, and an investigation of the factors necessary to the success of industrial effort at these points would repay capitalists seeking a really sound undertaking where the rising power of unionism could not disturb the economic development, and where the market was at the door.

WOOLLEN MANUFACTURE

With the advent of Foreign ideas engendered by the revolution, tweeds coat stuffs, flannels, socks, and other woollen goods came into general demand, and whilst the total value of the imports under this head only amounted in 1912 to £500,000 yet the demand is increasing rapidly, and little effort is being made to use the raw wool exported to fulfil this demand.

WOOLLENS

Large tracts of China lie at an elevation of 3,000 feet above sea level and over, and an area equal to 32% of the total is unfitted to grow alluvial crops requiring considerable heat. At present wool-bearing animals, chiefly goats, sheep and camels, exist in fairly large quantities in all the Northern, Western and Southwestern provinces, but in no province has any effort been made to improve the strain, to breed for wool, or to foster the woollen industry. From investigations made by the writer at the instigation of the Yunnan government it was found that whilst the quantity of wool obtainable from the native sheep was fair, the quality was so low that wool exported to London as a trial only fetched 2½d per lb. against the 1/6 to 2/- per lb.

fetched by the Australian cross bred and merino variety. Climate for climate the conditions in much of Western and Northern China are as good as they are in Great Britain, and better than in much of Australia, as water, feed, and space are available in much of Kweichou, Yunnan, Szechuan, Tibit, Mongolia and Kansu. As a by product to the industry, the treaty ports, French Co-Chin China, Tonkin, and Manila import mutton in the form of frozen carcases to the value of over £2,000,000 per annum from Australia and New Zealand, so that a market exists as much for the meat as the wool, close at hand, and every natural condition combines to make the industry a success provided a properly organized effort is made to deal with the subject.

In 1912 China exported raw wool to foreign countries to the amount of £1,020,000 of which £849,300 represented sheep fleeces, the bulk of which was exported from Tientsin where nine foreign owned cleaning and baling factories carry on operations.

It is understood that the Government of France is making some attempt to improve the breed of sheep in Yunnan with a view of exporting the wool to the North of France mills, but until the central government at Peking can issue definite orders to help the industry it is to be feared that the project will be of little avail.

IRON, STEEL AND ALLIED PRODUCTS

China imported during the year 1912 metals both crude and worked to the value of £1,884,500 and she exported ores, metals, etc., to the value of £2,435,600 of which tin contributed £1,756,711.

For a list of the economic mineral values of the different provinces I must refer my reader to the "China Year Book" for 1914, or other works, and confine myself to stating that iron, coal, lime, gypsum, lead, silver, copper, antimony, mercury, bismuth, nickle, zinc, tin, petroleum, arsenic, plumbago, alkali, realgar, tungsten, wolfram, alum, sulphur, asbestos, and practically every metal and mineral required for the economical development of China are present within her boundaries, in many instances in prodigal quantities.

Of these minerals, coal, iron, tin, and copper are and have been regularly worked for many generations (and in a lesser degree zinc, antimony and silver) by the crudest possible appliances and methods, so that in all this vast area there are to-day but twelve coal, two iron, one tin, and two antimony mines and smelters which can be said to be at all modern in their methods, or efficient in their working.

Although the copper, tin, silver, and iron workings are of great antiquity, the methods employed in mining, smelting, and working the metals has undergone practically no change during the last five hundred year s, whilst the land laws, road, land, and tithe taxes, and general land and mineral areas administrations seem designed to frustrate foreign capital, technical aid, or modern appliances being used, and to tax the native worked mine or smelter to the last cent possible; it will be seen that no individual effort to remedy the defects will be possible, and that only by securing the full help of the government in giving China a mining code compatible with her conditions, and in putting down the numerous local abuses that now exist, will it be possible for China to realize the full benefit of her natural resources. With the general expansion of European idea s, the demand for home-made machinery, mining and tool steel, rails, brid ge and construction material, small metal wares, locos, tractors and all kinds of material must increase and considering that the dockyards, repair shops, etc., at Hongkong and Shanghai, which use Chinese labour exclusively, and in most cases Chinese fitters, lathemen, engineers, etc., can and do turn out ships, boats, and other engineering products at prices considerably lower than is possible in Europe, it is only fair to suppose that similar works in the interior could, if run on sound commercial lines, especially if they controlled their own mines, at least compete with any manufactured goods entering China from foreign countries.

Already railways to the extent of 8,000 miles have been built or are building, and contracts to construct railways over more than 7,000 miles have in addition to the foregoing been granted; thus it will be seen that the demand for all forms of industrial metal work is bound to increase.

Iron sheets, plain and galvanized, tinned sheets, hand tools, scissors, knives, nuts, bolts, buckles, swivels, house, builders, and general hardware, enamelled hollow ware, steel ropes, cables, pressed iron and tinned sheet goods, iron castings, machine tools, sewing machines, lamps, agricultural machinery, iron, steel, copper and brass wire, nails, brads, screws, etc., all could be manufactured at Hankow, Canton, Tsingtau, and elsewhere to good advantage, but unless the raw material could be controlled and a fair system of taxation devised no single one of these industries could hope to succeed.

Coal to the extent of 15,000,000 tons per annum is already mined, iron ore to the amount of 656,000 tons was mined of which 199,000 tons of ore and 12,500 tons of pig iron were exported owing to lack of manufacturing facilities in China. Zinc ore to the amount of 7,000 tons valued at £16,500, antimony both crude and ore of 13,500 tons, value £102,000, are also exported, and these quantities do not represent 1% of the available production, provided fair laws and equal opportunity for all are granted by the administration.

In China to-day the mining population is as a rule the hardest working, the most down trodden, and heaviest taxed of all yet, in countries like the Malay States where Chinese miners are allowed fair opportunities and are properly governed, results are obtained which are at least as good as those obtained by white miners, and the bulk of the tin produced in Malay is by the work of these miners, smelters, and labourers, who work under climatic conditions unsuitable in many cases for European labour.

COINAGE METAL AND BULLION.

In 1912 China imported gold to the value of £2,427,800 and silver to the amount of £6,837,000 and exported gold to the value of £1,544,000 and silver to £4,823,000, and copper for minting purposes to the value of £165,000 during the same period.

Of this amount a certain percentage of the gold resulted from ordinary financial operations, but the balance of the silver imported for the year, amounting as it does to £2 million odd could equally as well have been produced in China as imported.

With the exception of the Jehol mines, the silver deposits in China are practically unworked, and although galena ores running as high as 63 oz. per ton have been assayed, an average of over sixty specimens assayed from districts as wide apart as Mengtzu in Yunnan, to Anhua in Hunan, gives 21 oz. in galenas as a general rule. In certain districts, notably western Szechuan and southeast Yunnan, horn and ruby silver are found over fairly wide areas.

Gold is panned in many of the streams which rise in Tibet and flow into and make up the Yangtze, Huang Ho, Mekong, Salween and their tributaries, but in no instance is the work carried on by anything approaching modern methods. Gold in a highly disseminated form is found both in quartz and alluvially throughout northern and Northwestern China, but the output is almost negligible from a commercial standpoint.

Turning now to items which are capable of being developed either wholly or partially by individual effort, and for which an increasing demand is being felt; refined sugar, flour, leather, and chemical products rank easily first by reason of the universal demand.

SUGAR.

Refined sugar to the amount of 101,000 tons valued at £1,484,000 was imported into China during 1912. Of this the greatest amount is refined in Hongkong, Marseilles, London, and Java. Sugar cane grows in Fukien, Kwangtung, Kwangsi, Yunnan, Szechuan, and in lesser amounts in other of the coastal provinces, and is manufactured in commercial quantities by modern mills at Suitow, Shanko, and Amoy in Fukien province. A beet sugar factory is located at Asiho in Manchuria.

Two refineries owned by British houses in Hongkong handle the bulk of the refined sugar used, but as this product is subjected to a tax of 5% plus 2½% Chinese import and transit tax, and as Hongkong has to import the raw sugar from considerable distances, it will be seen that a great opportunity awaits the refinery which shall be established in the interior near the source of production of cane.

In Yunnan on the Pa-Da Ho, sugar cane is grown over about 75,000 acres, and is crushed and boiled by the most crude native appliances, yielding a brown concrete sugar, which reaches the market in the shape of discs about 3 inches in diameter and 1 inch deep. At the point of production this sugar is sold for a cent a catty which works out at about two shillings per 133 lbs. (or about 4/10 gold cent a lb.) and in Kwangsi and that portion of the S. W. provinces where sugar cane is grown the price of the native product rarely exceeds £2.15.0 per ton at the point of supply.

Cane ripens and is cut from April to June, depending on the altitude of the country. Cane has been noted at altitudes varying from sea level to 4,500 ft., and so far as the writer has seen there must be at least 500,000 acres under cane in the five south-western provinces alone. In nearly all this area alluvial means of soil fertilization abound, and if machinery could be used in place of the wooden roller presses, and open cast iron pot boilers, and a white sugar produced in conjunction with light brown its sale would be assured in the district in which it was made, as it is in demand in practically every city and village in China.

So far as cultivation is concerned, the villagers seem to produce at least as good cane as is grown elsewhere, the weak point in the present supply being the refining process which is practically unknown save in Fukien, and in the fact that cane requiring soil fertilization, where this is not provided alluvially, this crop is not now grown, and large tracts of land suitable for cane are devoted to cereals which are often so plentiful as to hardly provide a wage for the growers.

In view of the fact that water power is at least as plentiful as it is in Norway, it would seem possible to provide nitrates cheaply by the process of fixing nitrogen from air as is done in the latter country, which would provide sufficient extraneous fertilization to allow cane being grown wherever climatic conditions allowed.

In view of the nearness of Java, refineries in China could always draw their supplies from there if the local supply could not fill the demand for raw material, and as sugar has now to pay 5% import plus 2½% transit taxes, into China, it will be seen that on even the quantity imported to-day, a great saving could be effected.

FLOUR.

Patent and white flour to the amount of 101,000 tons, value £1,050,000, was imported into China during 1912, coming from America, Australia and Japan chiefly and the total value of flour imported during the same period totalled 226,175 tons, value £1,904,000.

Wheat is grown in nearly every province in China, Manchuria being credited with a production of ten million bushels yearly, whilst Chihli and all the Northern, Western, and many of the South-western provinces grow wheat as an alternate crop to rice-sowing about December, reaping in May and June, to the extent of at least another thirty-five million bushels.

There exist at present about thirty-two roller mills with modern plant, operating on Chinese wheat—which gives as much as 38% of patent flour—of which five are in Shanghai, 19 are in or near Harbin, 3 in Hankow and district, whilst one each are in Yunnanfu, Chungking, Chefoo, and Tungchow. Of these, eighteen are wholly owned by foreigners and the

rest by Chinese. Whilst no figures are published it is known that in Szechuan, Yunnan, Kwiechou, Kwangsi, and Kansu, the production of wheat must be greatly in excess of the estimated figures given by various authorities for CHINA as a whole, and the spread of modern ideas has created a strong demand for white, or patent flour, which the present village water wheel, or horse driven grindstones are not capable of giving.

Wheat appears to grow in China between latitudes 22 N and 45 N, and between Latitudes 22 N and 30 N it would appear to thrive at all altitudes up to 7,000 ft. above sea level, indeed in Yunnan and Szechuan some of the best wheat in the country is grown at from 5. to 6,000 ft. above sea level. The majority of the crops are grown on alluvial or semi alluvial bottom lands, while hillsides and plateaus are used wherever the slope is under 40 degrees, or wherever a bullock can stand to plough, wheat is grown. The hardness of the grain varies considerably with the climate. In Manchuria 40% patents represents the average yield whilst in Szechuan the average falls to 34%, rising again in the extreme West to 38% in the dry zone of the Himalayan Eastern plateau. The bulk of the Chinese wheat has a short and relatively heavy straw and gives from twenty to fifty fold crops.

The price on the ground varies from about five shillings per cwt. to as much as £1.2.0 depending on transport, supply and demand, etc. Wheat is usually cut and stacked in the field, then threshed by flailing or horse rolls made of stone, and finally ground on stones actuated by animal or water power, and the resulting brown flour used for native bread, cakes, etc.

Water power being unusually abundant in China, small mills that would give an output of say 100 piculs (six ton) per day of ten or twelve hours (driven by water turbines direct or by motors and hydro-electric units) 40% white flour and balance lower grades, could be erected with advantage in at least fifty "FU" cities in China, whilst bigger mills up to an output of 50 tons per day could, provided supply arrangement was come to in regard to crop, operate successfully in Canton, Chungking, Ichang and Newchwang.

LEATHER.

Cow, buffalo and horse hides amounting to 19,400 tons, value £1,315,000, dressed and undressed, goat and sheep skins, value £605,650, were exported in 1912 from China; leather and leather goods to the value of £1,110,937 were imported from foreign countries during the same period.

The demand during the last three years for leather boots, belts, gloves, bags, saddlery, etc., to European patterns has steadily increased, and various provincial governments, private Chinese firms, and others have erected tanneries at Canton, Tientsin, Chengtu, Shanghai, Yunnanfu and Harbin to meet the demand, but the system practiced in most of the works seems in effect to reduce good hides to the poorest of leather. Many of these factories and tanneries are run by Japanese hired by the various Japanese educated Civil Tutuhs to teach the Chinese the art of tanning, but in nearly every case the result is far from being a success, despite the fact that hides, tanning material, water, and labour are plentiful.

That good tanning from Chinese leather using native tanning material is possible, is shown by a French tannery erected some two or three years ago in Tonking, where leather of all kinds is produced which obtains as good a price in the markets as the imported goods. In nearly every large Chinese city, boot and shoe factories exist, and it is estimated that there are in the treaty ports alone, over 20,000 such factories producing boots, belts, saddlery, etc., to the value of £650,000 per annum. Most of the products are of rough finish, poor material of little durability, produced by hand labour chiefly, the uppers as a rule being only stitched by American Singer sewing machines. Most of the factories employ from six to fifty labourers whose wages vary between 16 shillings and fifty shillings per month. The workers show considerable ability in copying faithfully the outward appearance of contemporary European and American boots, trunks, belts, etc., but the interior work and material leave much to be desired.

In Hongkong, one firm using for the most part Australian leather and imported trimmings, manufacture boots with Chinese labour practically as good as the European article at about 60% of the cost, and there is no doubt that if tanneries, in connection with boot and shoe factories were erected in Canton, Hankow, Shanghai, Tientsin and Mukden with machinery capable of turning out a fair average boot, costing say five shillings retail, with plant to make a better quality at about eight to ten shillings per pair retail, with an output of about 500 dozen per factory per week, the proposition would prove a paying one. Such factories should have if possible plant for manufacturing kit bags, suit cases, belts, gloves, and straps, as all these are in demand, and up to date no factory exists for turning out the quality demanded. European pattern saddlery and gloves are coming into demand more every day. In regard to these latter items, bearing in mind that kid, goat, and dog skins can be had in great quantity, it will be seen that they could be made at the point of demand, to much better advantage than they can be imported.

CHEMICAL PRODUCTS

China imports chemicals in the form of alkalies, indigotine, aniline dyes, match materials, etc., to the yearly value of about £2,242,565, of which values indigotine figures to the amount of £1,101,441. The predominating shade of Chinese dress being dark blue, indigo or its substitutes are in great and universal demand, that no trend of foreign ideas is liable to lessen for some very considerable period—if ever. China still grows vegetable indigo to some extent, but the native industry has been robbed of its value by reason of the imported German dye, and not one per cent. of the area under indigo twenty years ago is now cultivated.

Other shades of aniline dye to the value of £317,600 are used, in the various silk, cotton, and woollen dying and printing works, and in the paper trade. Phosphorous and match making chemicals, value £228,000, were imported and used in the various match factories. Medicines to the value of £439,500, mostly in the form of patent and proprietary articles, were imported and used, and the balance of the chemical import is made up of sodas, saltpetre, chemical manures, sulphur and sulphuric acid, etc.

Now the raw materials for 90% of the above products are present in China in at least as great quantities as they are in Europe or elsewhere, and if we take the item of patent medicines out of the above list there remains a chemical products industry of a present day value of £1,806,000 at least, with a greatly increasing yearly demand. Coal, as has been shown, is available in practically all its forms, near to river, ocean, and railway transport, sodas are found in Inner and Outer Mongolia, Kansu, Yunnan, Szechuan, Shansi, and Shantung, with smaller deposits in most of the remaining provinces. Sulphur is found in Yunnan, Kweichou, Szechuan, Kwangsi, Kansu, and elsewhere.

Alum, saltpetre, sulphur, are all worked in western Szechuan. The development of all mineral chemical industries depends on a fair and equitable mining code which would allow foreigners to start an enterprise with some hope of ensuring steady supplies of raw material.

Of the products dependent on vegetable sources, China grows in fair quantities, ginger, castor oil seeds, mustard, hemp, opium, vegetable and white wax, camphor, aniseed, cassia leaf oil, rhubarb, and many others. In most of these no effort has been made to increase scientifically the quantity or the quality, and old methods of cultivation, expression, etc., largely prevail. Yunnan especially is noted for its exports of medicines, which grow wild on the mountain sides, as they do to a lesser degree in Kweichou and Kwangsi.

Musk is collected in fair quantities both by European agents and by natives on the Eastern slopes of the Himalayan ranges in Yunnan, Tibet and Western Kansu.

Coming now to items of manufacture which are dependent more or less on articles already dealt with, we have to consider the manufacture of matches, paper, small metals, pressed, cast, and wrought wares, soap, stationery, glass, umbrellas, enamelled hollow ware, etc., for all of which an increasing demand is making itself felt, and which demand must with the opening up of the country in course of time develop into hugh dimensions.

MATCHES

Flint and steel still remain the only means of obtaining fire in the more remote portions of the republic. Matches are used to a greater or lesser extent—depending on the transport available—by fully 5/8ths of the total population, the bulk of which are manufactured in Japan, to the amount of thirty million, gross value £1,047,000 (1912). China manufactures matches, mostly of the old sulphur variety, in twenty-one towns, and has modern factories at Hongkong, Shanghai and Canton, but the output of these is wholly inadequate to fill the demand. In the interior provinces imported matches are often so dear and scarce as to be practically a luxury. Japanese matches are retailed at ten cents per packet of 12 boxes in most of the coastal and riverine ports (2½d) but in the interior, prices run up to 20 cents. (5d). Contrary to general belief, China has considerable forests still existing and might without difficulty make all the splints required for a domestic match trade, provided she employed modern machinery.

A great portion of Western Szechuan, Yunnan, Chinese Shan states, Kweichou, and the headwaters of the West river is heavily timbered with varieties of cuniforms, mostly in dense growths, of small trees averaging ten to twenty-five inches base diameter, suitable in every way for the production of match splints on a large scale. As a rule the forests are either on the banks of mountain streams and rivers or in close proximity to them, which would allow water power to be used for factories.

Fukien province also has some forests of Chinese pine, but these are fast disappearing in the form of poles exported through Foochow.

Much of the Western portion of China was clothed in heavy forest up to within the last hundred years, but clearing, emigration, forest fires and lumbering is fast thinning out this area, save those portions of it which are too far removed from transportation to allow their profitable operation.

Factories at Chungking, Chengtu, Sui Fu, Yengping Fu (Fukien), Nanning Fu, and Mukden, would pay well provided small sets of modern machinery, capable of a daily output of about one thousand gross boxes, per factory, of the ordinary non-sulphur Swedish pattern safety match were erected.

Japanese matches, although cheap, are as a rule too fine in the splint and fully 25 per cent break on being struck. The demand is for a stronger splint match, in boxes of about 50; 12 boxes in outer wrapper to retail for about 10 cents copper per dozen boxes.

Labor could be had in most of the districts enumerated at from twelve to twenty shillings per month without food, and power is abundant.

PAPER AND FIBRE INDUSTRIES.

China manufactures paper in very considerable quantities and practically all wrapping and cheap papers are home made, but all printing and writing paper is of foreign make and is imported to the value of £500,000 per annum, with a greatly increasing market.

Government paper mills exist at Wuchang, Hankow, Shanghai, Canton, Chengtu, Tsinanfu. Foreign owned modern mills are located at Shanghai, Kongmoon, and Hongkong. The supply of domestic made paper by no means equals the demand. The Chinese paper industry is perhaps the

oldest in the world, and from paper mills examined between 1906 and 1914 in widely different parts of the republic, the writer has concluded that the method employed to-day is the same that was used four thousand years ago.

The best paper is made from the inner bark of a species of mulberry that grows in the Western provinces, the bark being stripped whilst green, tied in bundles, and soaked in a stream for three to six weeks, then put into a circular stone trough, and pulped by a revolving stone attached by a shaft to a donkey or buffalo. The resulting pulp is thinly spread on cotton covered bamboo frames the size of the required sheet, drained off and allowed to stand in the sun till dry, then sun bleached, and the resulting product is a tough, heavy white paper which it is almost impossible to tear.

Brown wrapping paper of the commoner kinds, an enormous quantity of which is used in the preparation of firecrackers, is made in every province from a variety of different grasses and fibres, by a similar process except that the sheets are usually pressed onto a stucco covered wall facing the sun and peeled off when dry.

The great bulk of Chinese made paper is of fibre and vegetable origin. Rags are not as plentiful in this country as they are in Europe, as even the smallest cuttings are pasted together to form a foundation for native pattern shoe inner soles. Fibres of different varieties are however plentiful, especially in Kwangtung, Hupeh, Yunnan, Szechuan, Kiangsi, Kwangsi, where ramie, abutilon, hemp, jute, etc., are grown. Bamboo is also pressed into use as a paper making product, but the native processes do not provide sufficient means of separating and pulping the fibres to make a successful paper.

Printing presses and native newspapers have been set up in nearly every large center of population since the revolution and fifty-one foreign owned printing and lithographing works exist in the treaty ports and Hongkong, and the demand for a thin, white printing paper for newspaper, books, and kindred purposes would pay for the erection of mills in the fibre producing centers. Many of these districts at present lack easy means of communication with the coast, but it should be remembered that it is in such places that the enhanced price obtainable, would justify the use of machinery.

In connection with the same trade, printing works run on sound commercial lines, using Chinese compos and labor, together with copper plate, lithographic, and collatype works are badly needed in the interior of China, the lithographic and block work except in a few of the larger treaty ports being of a very poor quality.

School books, stationery of all kinds for schools, government offices, etc., are in demand and in most of the interior provinces little has been done to meet the popular Chinese taste for these articles.

Labor is as a rule fairly efficient and cheap when properly organized and the lack of production is not the fault of the individual laborer but —as is usual in most things Chinese—of the lack of commercial organization.

Peking possesses a modern printing works. Aside from the Commercial Press at Shanghai no Chinese works can compare to the mission presses or certain of the Shanghai foreign works.

SMALL METAL WARE.

Small hardware for all purposes, comprising house, building, canning, pressed and tinned articles, leather hardware, boot eyes, buttons in brass, copper, and nickle, electro plated goods, lamps, scissors, knives, razors, nails, needles, screws, tinfoil, etc., could all be manufactured to advantage in a country where labor and power are as cheap as they are in China, and where the demand is at the door.

The total value of the imports under this heading for 1912 stands at £663,600 (1912), with an additional sum of £560,500 for small machinery which could be equally well made in the country.

At present China produces neither tinned sheets, iron, or steel sheets or nail or needle wire to allow of her providing her own raw material for her presses, but as has been already shown under the heading of Steel and Iron products she has within her frontiers the means of production whenever her laws will admit of the working.

Natives in all provinces show considerable ingenuity in working up crude Chinese pig iron into small wares, and most of the hoes, buckles, knives, bells, bronze, iron, brass, and spelter castings, for images, gods, axes, turned brass and copper bowls, copper cooking utensils, hand made nails, and screws, of both iron and copper, boat sheathing, etc., made in the interior towns and workings to-day are produced under primitive conditions hard to realize at this period unless seen.

In producing the semi-hemispherical iron pots used by the natives for cooking the makers succeed out of the crudest materials in making castings that would do credit to the best European methods, but the time necessary in making them (as well as harness and other buckles, buttons, nails, etc.,) by hand, makes successful competition against machine made European goods impossible.

To find a parallel to the state of the Chinese metal ware trade it is necessary to compare it to the trade of Europe at the end of the eighteenth century. The natives have all the skill and much of the knowledge of manufacturing metal goods, without any of the necessary machinery to enable them to compete—even in their own markets. In Yunnan, Szechuan and Kweichou, pre-eminently the economic mineral area of China, the writer has noted over two hundred villages where iron is worked, seventy-five where copper is mined and smelted, nine where tin is washed and smelted, twenty-eight districts where spelter is reduced, and sixteen where lead and silver is separated, yet with the exception of one tin refining plant, one hydro-electric plant, and one furnace blower plant, there is not in all this vast region comprising over 400,000 sq miles, one factory using modern machinery for the production of metal wares.

In Canton there are many workshops for small machine work, but even here the bulk of all metal ware is still imported, and no organized effort has been made to give China her own workshops or to take advantage of the cheap and plentiful labour that exists.

METAL WARES

Hongkong, Shanghai and Canton possess iron foundries, but all of these are owned by foreign firms, and are usually associated with dockyards and ship repairing establishments.

HOLLOW ENAMELLED WARE

Belgium and Germany both export cheap hollow ware to China, to the value of £106,000 (1912), and this in the face of the enormous amount of pottery that China produces herself in practically every Hsien district of the republic.

All the necessary raw materials exist both for manufacturing these goods, not only for China but for the rest of the East. When it is considered that India, Java, Malaysia and Straits in the aggregate, import a yearly total of £456,000 of this ware, manufactured in countries paying at least 250 per cent more for their labor than would be necessary were the factories operated near the markets (in addition to freights, etc.,) it must be admitted that no effort has been made to cope with the demand.

Copper, brass, and iron hollow ware for domestic use are made in all the western and several of the central provinces, from hand hammered sheets for the most part, and thin cast iron. The trade in one province alone is worth over £21,000 per annum, but although hand decorative enamel on copper and silver is carried on in certain restricted areas, no machinery exists for turning out domestic iron enamelled ware on a commercial scale.

Teapots, plates, tea cups, basins, lunch carriers, and mugs are in demand, and may be found exposed for sale from Manchuria to Sinkiang, all bearing Austrian, German, and Belgium trade marks.

SOAP

This commodity is imported from Great Britain, France, Germany, Austria and Belgium to the value of £345,000 (1912) in addition to that which is manufactured in eighteen native and eight foreign owned works in the country. In addition, other works are being erected in Shanghai, which it is claimed will be able to supply most of the coast provinces, but in view of the fact that all the necessary raw materials are cheaper in the interior than they are at the coast, except palm oil and copra, and that materials manufactured at the point of demand will always be able to compete against the same manufactured hundreds of miles away and subjected to heavy transport charges, it is doubtful if smaller factories established at the markets would not succeed better than large ones on the coast. Tallow can be had in most of South-west and North-west China centers at from 6 cents to 9 cents per lb. which works out at £13 to £20 per long ton, and soap factories already existing do quite well, but cannot turn out soap equal to the imported varieties owing chiefly to lack of machinery and technical knowledge.

GLASS AND GLASS WARE

The total imports under this heading for 1912 totalled £120,100, the bulk of which was of German, Austrian and Belgium origin, and consisted for most part of window glass, plain and coloured, bottles, tumblers, electric shades, and similar small cheap ware.

Seventeen glass works exist in China of which twelve are wholly native owned and operated, and the remainder foreign.

Bottles are greatly in demand in China, and outside the main centers sell at a price wholly out of proportion to their cost. The adoption of window glass in all of the better class residential houses is only prevented by the high interior cost which varies from 150% to 500% of the coast retail price.

Wherever the Chinese have been able to obtain it, glass has come into general use, but unfortunately although the coast districts are well provided, by factories, foreign imports, etc., the interior, with the exception of Harbin and Changsha, possesses not a single modern works. The raw material is much more plentiful inland than on the sea board. Present methods of Chinese transport however do not lend themselves to the successful carriage of glass and other fragile wares.

Factories established at Chungking, Kingchoufu, Posehting, Anking, Kongmoon, and Sianfu, would each cater to about 15 million people and each would have raw material either at its door or within easy transportation.

So far, only cheap varieties of pressed and moulded glass have been in demand. If up to date plants were installed, the operating costs would be much less than for similar works elsewhere in the world. Whilst this exhausts our list of items of import which might better be manufactured in China, it by no means even touches the fringe of the industrial opportunities that await those who would enter in the many forms of industrial development presented.

The Chinese people have many great qualities but seemingly do not possess sufficient administrative ability to carry on producing works to compete against foreign endeavour. Whatever the industry may be, native owned and directed works, have never, so far as the writer is aware, really competed against importers to any great extent.

Many excellently equipped factories certainly exist, but their management, output, and general operation is deficient. For instance, all kinds of oil seeds, sesamun, ground nut, bean, mustard, and cotton,—abound in many of

the southern and south-western provinces, but the means of extracting the oil is either totally wanting, or else when present, the machinery is not operated in an efficient manner, and it is only in a small part of the north, especially in Manchuria, that oil mills can be said to exist.

In certain commodities such as clothes, school books, etc., it would be hard for up to date factories to compete against the native, but in most things, small, compact, up-to-date plants capable of catering for the needs of their particular markets are badly needed, and would if erected prove valuable holdings.

Second hand machinery, bribery, corruption, and poor administration, have not aided the country to build up its industrial wealth, and although silk, tea, and certain other industries have received much attention, it was only as raw materials to be exported, not as materials to be manufactured. China offers greater openings for foreign capital than any other country in the world, and it remains to be seen what efforts will be made to cope with the situation. Loaning money to China will afford no real help in her battle to help herself, but factories established throughout the land to enable her to use her own resources will prove of the greatest possible benefit to the greatest number, and allow China at the same time to copy our methods and ways, and to emulate our industrial laws.

Diplomatic pressure on China to benefit individual firms and corporations must eventually prove harmful to the country applying it, but pressure brought to bear to give all of all countries equal opportunities, and miners of all countries equal rights, must not only benefit all foreigners, but all China.

In conclusion I give under a list of the factories most needed at sites nearest to transportation, raw material, and markets.

HANKOW	Copper refineries, sheet copper and brass works. Iron sheet, plate, wire, pipe works. Steel sheet, pipe, wire works. Corrugated sheets, galvanizing sheets, pressed iron, tin, and other ware. Hollow enamelled ware. Umbrella frames. Nail and needle factories, tinned sheet factories, etc. Iron foundries, glass. Oil and cake mills, roller flour mills, paper, glass, boot, shoe, and leather factories, tanneries, match, soap, etc. Soda and Alkali works.
CANTON	Albumen, paper, vegetable oil press, cigarette, indigo, rope, sugar refineries, soap. Iron, copper, tin, smelters and refineries, wrought iron and steel works, small metal ware, builders, leather, and other hardware, nail and needle factories, lamp and lamp ware, tinned galvanized sheets, plain and corrugated sheets, glass, enamelled iron ware, bone and metal button factory. Telephone, telegraph, and power wire, etc. Boiler and machinery shops.
YUNNAN	Tin, copper, silver, lead, nickle, spelter, refining furnaces. Iron blast furnaces, converters, machine shops, foundries, mining and tool steel works, copper rolling, brass founding, iron, steel, and other sheets both galvanized, tinned and plain. Oil mills, flour mills, soap, cigarette, woollen, weaving and working mills, glass works. Leather and boot factories.
NANKING	Iron furnaces and converters, telephone and telegraph wire, nail and needles, small hardware, seed oil mills, glass and paper mills, leather and boot factories.
TSINGTAU	Iron furnaces and converters, rolling mills, wire, plain, corrugated, galvanized and tinned sheets. Cotton ginning, and cleaning and weaving works, (spinning). Glass and cement and tile works. Pipe for steam, gas and water, iron and brass foundries.
NANNINGFU	Flour, oil and rice mills. Tanneries, and leather manufactures, sugar refineries.
CHUNGKING	Flour, oil and rice mills. Tanneries, and boot and glove factories, rope and fibre factories, paper and glass mills, antimony, spelter, copper, and iron smelters and furnaces. Match factories, boiler machinery, hardware, and nail and needle wire, bolts, nuts, etc., plants.

THE DIFFICULT POSITION OF THE BOARD OF COMMUNICATIONS

(Contributed)

The flotation of railway loans must be delayed by the financial stringency due to the disastrous war of 1914. The present pause is therefore a suitable opportunity to look back on the work of the past, and to consider the future.

There is no question as to the benefit to the people of China from the building of railways, but it is equally certain for the present at any rate, that the Government cannot undertake unremunerative lines, and therefore financial results are of the utmost importance.

It is not easy to state the cost of railway construction in China. Figures have been published from time to time, often by interested persons trying to make out that their methods, or their nationals, produce better and cheaper work than any other. Such statements conveniently omit a good deal. Other statements simply give a lump sum, without details and no quantities that would enable the figures to be checked, and rough estimates have been put forward as if they were as good as the results of finished work. After the work is done, it will be time enough to compare results.

There are legitimate reasons for the absence of useful figures, the amount contributed by the State to certain lines is not definitely ascertainable, and destruction of records in rebellions, and extensive damage to railways, has complicated the cost. One of the best things done by China in recent years is the appointment of the Unification of Railway Accounts Commission. When their recommendations take effect, the railway accounts of China will be among the best; that however is in the future, at present we are only on safe ground by taking a typical railway entirely constructed under a loan agreement and certified by a competent accountant. The "all in" cost is the total of loans, overdrafts, and debts, less any funds remaining.

A very fair average sample piece of line is the Southern section of the Pukow railway. It has been recently built, is not an extension of an existing line, so had to set up its own administration. The rails are 85 lbs. and the track is good and well ballasted. Bridges amount to 97 feet per mile, the largest being 9 spans of 200 ft. For a third of its length the route passes through broken country involving a good deal of rock cutting and banking. Swampy land gave some trouble. In the broken country there is much grade of 1 in 150. A large terminal had to be built on the low land at Pukow, and suitable workshops have been installed at Puchen. Stations are simple, but adequate in accommodation. The locomotives are fine, and enough other good rolling stock was provided to start the operation of the line.

Up to the end of 1912, the "all in" cost was £11,750 per mile Discount on the issue and other charges took £1,050, and interest during construction £1,540, leaving £9,160 for construction, including Head Office and all incidental expenses.

To compare one railway with another on the cost per mile basis is absurd, without details. In flat easy country with few rivers, and little trouble from floods, the work will cost less than £9,160. In very difficult country, with rapid rivers, or very wide rivers, and under adverse political conditions, it will cost more. To take one item as an example, a railway under former conditions has 50 feet of bridge work per mile, another in hilly, but not difficult country has 200 ft. per mile, and of a larger class, so that the cost of the one, per mile, is fairly six times the cost of the other. No useful comparison can be made without quantities and conditions.

The exchange, length of line, climate, labour conditions, and many other factors are not controlled by engineers, or contractors, and affect the cost. For a good "average railway" it would not be safe to take less than £12,000 a mile as the "all in" cost, involving an annual interest payment of £600 (at 5%) and a redemption payment of £300 from the tenth to fiftieth year, in addition to working expenses and improvements.

It must be noted that China has set herself an onerous task to pay 5% from the start, and to redeem the capital. A vision of railways with all the capital paid off, and the entire revenue available to improve and extend the lines or reduce rates is a magnificent conception. An order to this effect in Europe or America would cause consternation in railway and trading circles, and a panic on the exchange. Can it be done in China? Is it being done?

When we turn to operating accounts some confusion again appears, also to be remedied by the accounts commission. State capital, all or partial, reduces interest and redemption. Some lines cannot pay all their interest, some can, but not redemption (which perhaps is not yet due) but no clear statement can be obtained anywhere, and some care must be taken to distinguish the real results. Unless the same standard of maintenance is observed, and the same practice as between maintenance and improvement account, comparisons are affected.

The most successful railway undertaking in China is the South Manchuria railway, 702 miles. On all points it may not lead, but from the public point of view, the revenue per mile, (over yen 30,000 gross) passenger and freight facilities, general discipline and good order, are probably better than on any other line. This railway possesses advantages unattainable on Chinese lines at present. It is far less impeded by out of date Customs and likin arrangements than any other line, and the whole of the profits are spent on developing it.

The Peking-Mukden line is perhaps the best example to consider, and its position may be condensed thus, length 605 miles, revenue $22,350, working expenses $7,760, net revenue $14,590, which was spent thus, improvements $2,810, sundry outside items $500, interest $1,570, redemption $1,180, to the Government $8,380, all these being per mile per annum. As the rate of exchange was above the average, for the £12,000 line it may be put that we require $7,000 for interest, $4,000 for improvements and sundries, and after the 10th year another $4,000 for redemption. The P.M.R. was partly constructed with State funds, and the capital on which interest and redemption is now paid amounts to £3,000 per mile only. There would have been very little left to hand over to the Government if it had been a £12,000 line, and for the last seven years the railway would just have held its own, paying interest, improvement and redemption. But the worst would now have been past, for as the loan is reduced, charges decrease, and it may safely be said that the ideal conditions can be, and are being, obtained on the Peking-Mukden Railway.

On the Peking-Kalgan railway, 143 miles, in the first year the net revenue amounted to $500 per mile, in 1911 to over $3,500, and in 1912 to $9,000, a good result. As this line was constructed with State funds, mostly supplied by the P.M.Ry, there is no important loan interest, etc., to

pay, and here we have already in operation the beneficent results aimed at for all China. The surplus is being used to extend the line.

On the Peking-Hankow railway, 836 miles, net revenue per mile 1906, $6,000, 1909 $9,500, 1912 $11,500, 1913 about $14,500. This railway is burdened with the repayment of the Szechuen-Hankow railway loan, and with an extra loan raised to redeem the original concession, so payments for redemption are heavy. But if the revenue of 1913 can be maintained all obligations should be met without curtailing the very necessary improvements.

The Tientsin-Pukow railway, 674 miles, made $5,000 a mile in 1913 as gross receipts, a good start, in 1914 the net should reach $3,000. Apparently full interest will not be paid until the 3rd or 4th year, and the improvement account is a large one, mostly for extra rolling stock But there is no reason why this railway should not, in a year or two, be among the best.

The Taiyuanfu railway, 151 miles, is now doing better, and net receipts have reached, 1913, $7,000 per mile, more than enough to pay interest, but not enough for redemption or improvement, however it seems likely to reach that stage before long.

Unfortunately there are some less encouraging results. The Taoching railway, 93 miles, with net receipts of under $2,000 cannot pay interest in full, nor is there much prospect of its coming up to standard. The Pienlo railway, 115 miles, gross revenue about $5,000, is in the same position but will become part of a through route, when its prospects will improve.

The Shanghai-Nanking railway, 211 miles, has to meet such severe competition by canal and river, that freight traffic is very small. The gross revenue is about $14,000 and the net $5,000. Interest however exceeds that, and the line may not reach standard until it is connected to the Nanking-Changsha railway.

The Pinghsiang railway, 70 miles, has gross of $8,000 and net probably $2,000, not enough for the standard interest. This line may form part of the Nanking-Changsha system.

The Canton-Kowloon railway, 112 miles, has to meet severe river competition, and the freight traffic is very small. The net revenue is a very small figure, and improvements have still to be faced. The line will do better when connected to the Canton-Hankow line.

The Kirin-Changchun railway, 80 miles, appears to be in a difficult position, with $6,000 gross, and expenses exceeding this though probably some of this is due to the line not being quite finished.

As with construction figures, these results per mile of railway must not be used to compare one railway with another without knowledge of quantities and conditions. But they do show the net revenue, and interest obligations, in a way that enables us to get some idea of the problem.

There are a number of private railways in China, mostly very short. A few appear to pay working expenses, but some have not been completed owing to want of, or disappearance of, the funds, and others have failed owing to disagreements among the shareholders. If they are to continue running some of them will eventually have to be taken over by the State, and as the proprietors expect to be recompensed for all the money lost, there is not much profit in sight to the Government from the private railways.

When taken enbloc, there is at present a deficit in the budget, that is to say working expenses and interest can be paid, but either much needed improvements cannot be carried out, or redemption must in some cases be delayed. This is the difficult position in which the Board finds itself, they have the hard task of reconciling conflicting claims on the improvement fund, and of finding the deficits.

Until it is seen how things are going, it would not be wise to provide too much rolling stock, for example, at the start of a new line. But the improvements of the first three years are really the completion of the construction, and it seems quite fair that FINANCIERS SHOULD ARRANGE FOR PART OF THE INTEREST AND ALL THE IMPROVEMENTS OF THE FIRST THREE YEARS TO BE INCLUDED IN THE CAPITAL, AND FOR THE REDEMPTION TO START ON A SLIDING SCALE. To put the working account in debt at the start, for interest, and to hamper improvements is carrying the ideal too far. The first five years should be allowed for attaining full interest, the second five for building up a respectable improvement fund, the third five for getting well into redemption, and the fourth five for attaining a matured position and assisting new lines.

The railways now open may be divided into three classes. First those that have reached a safe position. Second those with good prospects but requiring help during first years, and third those with no immediate prospect of meeting full obligations.

No more of class 3 should be built for purely commercial reasons, unless State aid is promised, and railways of class 2 should not be built faster than class one can support. At present this may appear slow, but the ratio of expansion will be an increasing one, and in 25 years' time the possibilities will be enormous.

In the meantime can anything be improved? can construction and operation costs be reduced, or revenue increased? Financial charges are a matter of credit. It seems impossible at present to raise capital by shares at par, on which no interest would be paid till it was earned. Every obstacle to trade, every disturbance, scares lenders. A riot or tricky law anywhere, though not in the least connected with railways, injures confidence and raises the terms of railway loans. The adventures of White Wolf increased the cost of every railway that will be built for some years. The war will cause a great demand for capital in Europe, and no reduction of financial charges seems likely.

Construction work has hitherto been done under railway administration. Contract work (i.e. for an exact price offered in advance) is out of the question. A contractor wants plans, specifications and quantities from the chief engineer, he wants tenders for all materials delivered at the site, he wants many sub-contractors, men with no capital but much labour experience on railway work. He knows from his own past experience what similar works have cost, he knows that after the Directors have settled the contract that he and he only will manage the work, and he wants all this *in advance* so as to enable a *bona fide* offer to be made up. To take such a contract in China would be a plunge into the unknown. An offer could be obtained, of course, but it must be wide enough to cover all risks, and therefore is not a profitable offer, for China. The remedy for all this is in China's own hands; improve the conditions, and some day contractors will appear, and there should be some benefit from the competition.

But under the same improved conditions, administrative work will also be easier. It is not a question of the name of the system, but of the experience of the men in charge, for after all both work on exactly the same lines, namely, materials bought by tender, and as much labour as possible sublet.

China's directors and engineers have had considerable experience now on some lines, and contractors have a hard task before them to better the results. There seems little chance for reduced construction costs.

Maintenance charges are naturally light on a new line, after 5 years sleepers begin to go, after ten the rolling stock wants much repair, after 15 the very rails get worn down. No railway has reached its maximum working expenses, but if receipts increase in a greater ratio this will be balanced.

The only possible solution is increased revenue. This is not only possible but is taking place, but the utmost efforts are required in all directions to speedily abolish antiquated Customs and likin arrangements, to introduce the booking at railway risk and delivery to all places, to train an efficient police, and to sternly put down petty exactions at stations.

Rates may not be higher than in Europe, but what does that mean to a Chinese? With his much lower scale of daily finance, it means a very high rate, and one of the most intricate problems is to decide whether a reduction will lead to sufficiently increased traffic. In time it will and must come, if railways are to be a real benefit to the people. It would be worth trying one or two cheap fares between large cities, for 3 years, say third class fares of $1 between Peking and Tientsin, just to see how it would result.

Recently the accountants' commission did a great deal of useful work, and the near future should see a development of this action, in standing commissions appointed for each principal section of railway work all over China. The standing commissions should be asked to select a few of their best men to form a Central Commission to assist the Board in matters of general policy.

On the railways the staff of officers is small for all the supervision they have to do. Their non-commissioned officers are willing, but it will take time to train up a generation with the railway instinct in their bones, and proper ideas of responsibility and efficiency. The coolies who worked well on construction when paid by contract, assume a somewhat nonchalant attitude when paid by the day. Much has been done, but much remains to be done, and all ranks and classes should combine to "do their bit" to assist the Board to put China's railways on a firm footing.

O. W.

TSINGTAU SOAP FACTORY

A German Chemist recently erected a soap-manufacturing plant in Tsingtau, which appears to be having considerable success. The idea is to manufacture toilet and washing soaps to be supplied to the natives at lower prices than the imported products.

A novelty which has been introduced, is the sale of soft soap in enamel buckets. This is sold in graniteware enamel buckets holding 10 kilos, and sells complete with wooden cover for the bucket at $3.80 Mexican ($1.79 gold), a 5-kilo bucket of soap selling at $2.20 Mexican (1.03 gold). The cost of the bucket and soap together is less than the buckets alone in the regular retail shops of the city. This mode of selling appeals particularly to the Chinese, as they are particularly anxious to secure enamelware goods.

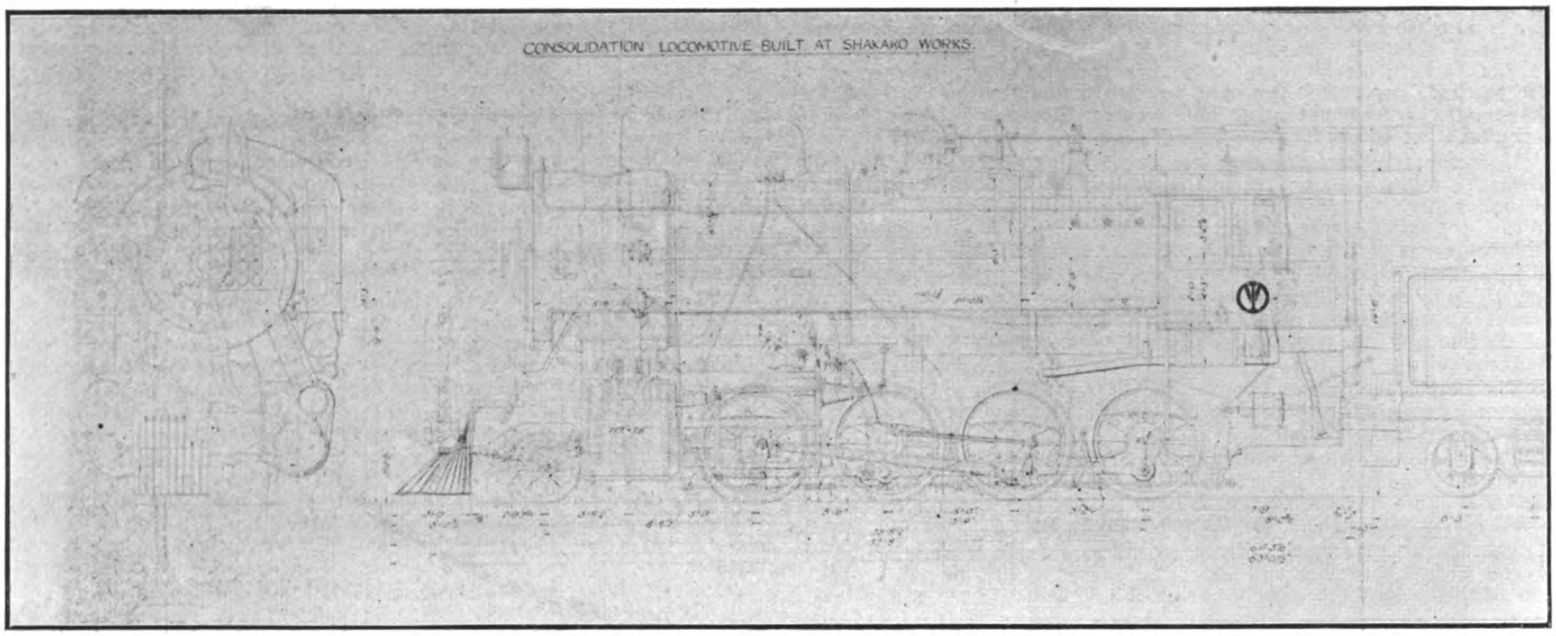
The soap factory sells its violet, lilac, heliotrope, and lily-of-the-valley scented toilet soaps in cartons containing three cakes at $1 Mexican (0.47 gold) per carton at retail. Other toilet soaps are packed four cakes in a carton and are sold at 50 cents Mexican (23 cents gold) per carton. Family toilet soap comes six cakes in a carton and sells for 50 cents Mexican (23 cents gold). Lanolin soap sells for 15 cents Mexican per cake and shaving soap at 20 cents per cake. Washing soaps come 25 cakes or bars to the case, each bar weighing 2 pounds, and sells for $5 Mexican (2.35 gold) per case. Tar soap, packed 25 cakes of 2 pounds to the case, sells at $4.50 Mexican.

The machinery for this factory was secured from Germany.

S. M. R. LOCOMOTIVE

STANDARD GAUGE RAILWAY ENGINE

DESIGNED AND BUILT AT S. M. R. WORKSHOPS

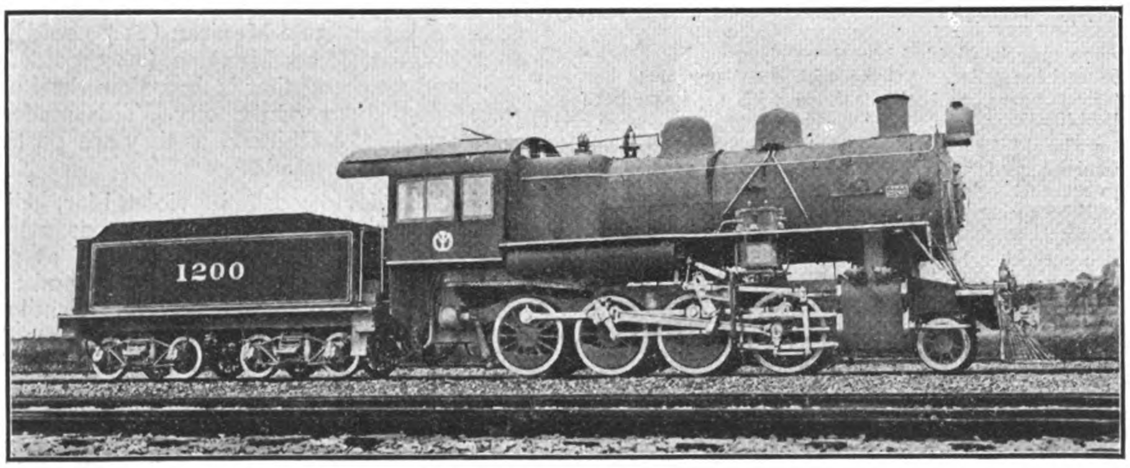


On Friday, October 30th, 1914, a trial trip was successfully made of a new Railway Engine on the main line of the South Manchuria Railway, which event marked a new epoch in the annals of Japanese Railway Engineering. Already on the Imperial Japanese Government Railways home-built locomotives are drawing Imperial Government trains, but all the Japanese home lines are on the narrow gauge. This one, whose trial trip Dairen had the honour of witnessing, is the first standard gauge locomotive ever designed and built by Japanese engineers. The South Manchuria Railway Company had the distinction of producing this interesting piece of work at its central workshops at Shakako. near Dairen, the terminus and headquarters of the Railway, and one of the most flourishing ports in the Far East.

The lay-out of the Shakako Workshops, though on a comparatively small scale, is one of the best and most up-to-date in the world, and the equipment is second to none. Opened only in 1911, with the most modern facilities and machinery that science had invented, nothing has yet become obsolete or old-fashioned, while new inventions and facilities are added whenever they appear. There are nearly 3,000 well-trained employees, the majority of whom live in a model town adjoining.

Having produced some of the most beautiful saloon carriages and passenger cars in the world, as well as goods cars of every description, tram cars, etc., and having, in addition, put out at short notice much machinery, such as huge winding machines for use in the Company's coal mines, etc., it is not to be wondered at that, under such an able superintendent as Mr. H. Mori, formerly Superintendent of the Workshops of the Imperial Japanese Government Railways, ambition should soar to the construction of a locomotive engine.

Hitherto, the South Manchuria Railway trains have been pulled by the finest locomotives money could buy in America and Great Britain. But it is claimed by the builders that this home product has proved by actual running to be the finest engine, with the highest efficiency, among all the locomotives in the possession of the Company. It is of entirely new design, and has been aimed at embodying the merits of the best types in Europe and America to suit the condition of the Company's lines.



New Standard Gauge Engine Built at the South Manchuria Railway Shops.

Thanks to this initial success, the Workshops are now building five more locomotives of exactly the same design, and are also constructing six double-ender tank engines for the Chosen (Korean) Government Railways. Moreover, it is intended to gradually increase the capacity for building new locomotives and cars.

The following is a description of the engine whose trial trip is under mention:—

The frames are of plates with underhung driving springs, similar to the Continental type, and have 0.176" deflection per short ton, which lies between the English and American practices, and effects the best riding of the engine.

The boiler is of the Belpaire type, with cylindrical smoke-box, supported by a saddle made of steel plates, the exhaust pipes in the saddle being of steel.

The brick arch is of special re-enforced design, with no arch tube, which has been found, by actual trials already made on several locomotives, to last over seven months without attention.

The superheater is of the Schmidt type, with superheater heating surface of 532 sq. ft.; and the lubrications of cylinders, steam chests, and air pump are by Michalk's patent mechanical lubricator.

The valve motion is of the ordinary Walschaert type, and the elliptic valve diagram was automatically drawn by actual valve motion, thus ensuring that the steam distributions in the cylinders are perfect.

The principal dimensions and weight distributions of the locomotive are as follow:—

GENERAL DATA

Gauge .. 4'–8½"
Fuel .. soft coal

Tractive effort	40,000 lbs.
Weight of engine in working order	181,850 lbs.
Weight on first drivers in working order	41,000 lbs.
Weight on second drivers in working order	40,750 lbs.
Weight on third drivers in working order	40,200 lbs.
Weight on fourth drivers in working order	41,100 lbs.
Total weight on drivers in working order	163,050 lbs.
Weight on leading truck in working order	18,800 lbs.
Weight of engine and tender in working order	292,400 lbs.
Wheel base, driving	15′–4″
Wheel base, total	23′–8½″
Wheel base, engine and tender	53′–5¼″

RATIOS

Weight on drivers÷tractive effort	4.08
Total weight of engine÷tractive effort	4 55
Tractive effort × diameter drivers ÷ *equivalent heating surface	646
*Equivalent heating surface÷grate area	68.3
Fire box heating surface ÷ *equivalent heating surface, per cent	5.42
Weight on drivers÷*equivalent heating surface	48.7
Total weight of engine÷*Equivalent heating surface.	54.1
Volume both Cylinders, cub. ft	12.88
*Equivalent heating surface÷Volume Cylinder	259
Grate area÷Volume Cylinders	3.8

CYLINDERS

Kind	Simple
Diameter and stroke	22½″×28″

VALVES

Kind	piston
Greatest travel	6″

WHEELS

Driving, diameter over tires	54″
Driving journals, main, diameter and length	9½×10″
Driving journals, others, diameter and length	9½×10″
Engine truck wheels, diameter	33″
Engine truck, journals	5½″×10″

BOILERS

Style	Belpaire
Working pressure	180 lbs.
Outside diameter of first ring	6′—1⅝″
Firebox, length and width	5′—9¼″×8′—5⅞″
Tubes, number and outside diameter	225–2″
Flues, number and outside diameter	32–5⅜″
Tubes, length between tube sheets	14′–5¾″
Heating surface, tubes and flues	2,367 sq. ft.
Heating surface, fire box	182 sq. ft.
Heating surface, total	2,549 sq. ft.
*Equivalent heating surface	3,349 sq. ft.
Superheater heating surface	532 sq. ft.
Grate area	49 sq. ft.

Smoke stack, height above rail	15′–3″
Centre of boiler above rail	9′–6″

TENDER

Tank	Water bottom
Frame	Channels
Weight	110,550 lbs.
Water capacity	5,000 U. S. gallons
Coal capacity	11½ short tons

*Equivalent heating surface=2,549+(1,5×532)=3,349 sq. ft.

RAILWAY APPLIANCES

THE PYLE NATIONAL HEAD-LIGHT

The remarkable results obtained in America with the Pyle National Electric Head-light for locomotives have frequently been referred to in the American railway and engineering press, and they have always provided astonishing reading for people in England where locomotive head-lights are only used as indicators to signalmen as to the class of train approaching, and not, as in America, India, Africa, Australia, &c., for lighting up the track ahead. But although powerful electric head-lights are not required on the railways of the United Kingdom, there is a very large field for their adoption elsewhere owing to the railways not being so carefully guarded as they are here.

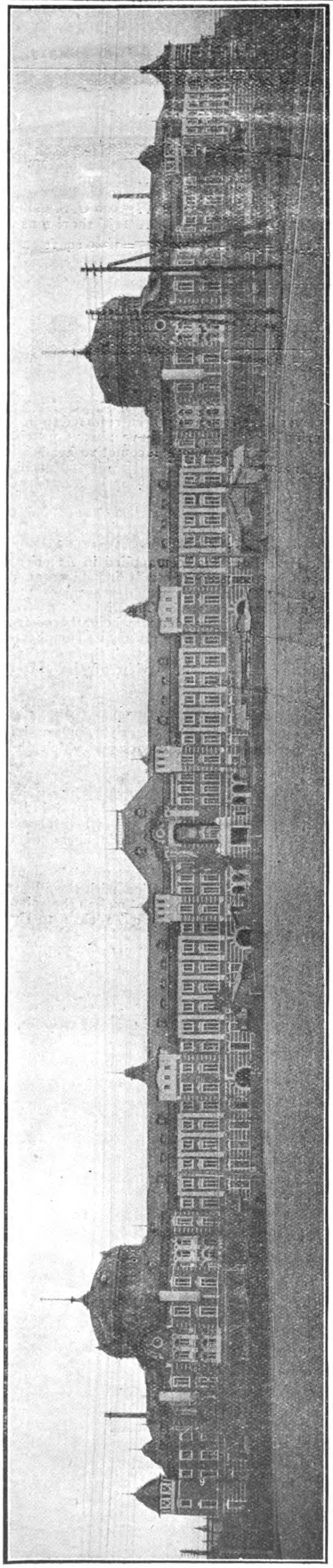
The Pyle National Electric Head-light has been applied in America to more than 22,000 locomotives and has been undoubtedly instrumental, not only in facilitating the work of the enginemen, but in preventing many accidents which otherwise would have occurred. The light is a strong penetrating and powerful beam, of which an idea may be gathered from the accompanying illustration. The apparatus is by no means complicated, nor is its initial cost a large one. The maintenance cost, including repairs, does not, it is stated, exceed 4s. a month which, in view of the extreme efficiency of the light, can hardly be said to be worth consideration.

The apparatus consists of a turbo-generating set of sufficient capacity to supply all the lamps required on the locomotive. The rotor of this unit is of the built-up type, steam being led to the vanes through a single nozzle. Attached to the nozzle block are two guide passages which direct the impingement and flow of steam to and from the vanes on the rotor, producing the highest efficiency. The dynamo is enclosed, and of the internal magnetised type with windings proportioned to carry heavy overload without injury to the machine. The arc lamp for the head-light is of simple construction; it can be trimmed quickly and when properly focused, will illuminate the track for fully half-a-mile ahead of the locomotive.

We have only described the apparatus in the briefest possible manner in the foregoing, but what we have said, in conjunction with the illustration appearing herewith, will, we think, suffice to make the simple character of the apparatus and its high efficiency quite clear to those interested.

The address of the Pyle National Head-light Company is 500, Troop Street, Chicago, Ill., U.S.A.

Actual Photograph taken on the Chicago, Rock Island and Pacific R.R., with no other light but the Pyle-National Electric Headlight. The station seen is half a mile from the engine.



The Tokyo Central Railway Station.

TOKYO CENTRAL STATION

The new Station is situated at Yaesucho, Marunouchi, Kojimachi-ku, and its main building stands looking towards the Imperial Palace over the moat. The building is in the style of the French Renaissance and is an imposing structure combining magnificence with beauty.

The foundation of the building is of wooden piles and concrete. The exterior and partition walls are steel-framed and built of brick and stone. The floor being made of reinforced concrete is fire-proof, and the roof, which is steel-framed, is covered with copper plates and slates.

The main building, whose total length is 1,104 ft. and whose width varies from 66 ft. to 132 ft., covers an area of 9,364 sq. yds., of which 108 sq. yds. are taken up by the single-storied, 224 sq. yds. for the two-storied, and the rest for the three-storied portion of the building. In both southern and northern ends there is a basement. The total area of all the floors is 28,968 sq. yds. The height of the building in the three-storied part is about 54 ft. from the ground level up to the eaves. The top of each of the domes, which cover octagon concourses on each side of the building, is about 124 ft. above the ground level. The ground floor is 1 ft. 6 inches above the ground, and the height of the ceiling from the floor is 18 ft. on an average on the ground floor, 24 ft. on the first, and 10 ft. on the second floor. The depth of the basement is about 8 ft. below the ground level.

FACILITIES ON EACH FLOOR.

The entire ground floor is allotted for the use of the station, the right-hand portion being for outbound passengers and the left-hand portion for those inbound, while the middle portion is set apart for the use of the Imperial Household.

In the right-hand portion, where outbound passengers enter the building, are provided an octagonal concourse with two series of booking windows and a row of entrance wickets, a 1st class waiting room for ladies (separate from the other rooms and fitted with lavatories and toilet rooms), a 2nd class waiting room, a 3rd class waiting room, a cloak room, the Ticket Office of the Japan Tourist Bureau, a luggage and parcels forwarding office, two dining rooms, etc. At the back of the main edifice is a single-storied building where there are 1st and 2nd class toilet rooms and lavatories, 3rd class toilet rooms and lavatories, a public-telephone box, a public telegraph office, a book stall, etc.

In the left-hand portion where inbound passengers pass out of the station, there are an octagonal concourse with exit wickets, a waiting room, a ladies' waiting room, ladies' toilet rooms and lavatories, a luggage and parcels claiming office, two cloak rooms, public telephone boxes, etc., and in the single-storied building attached to the back of the main structure are found toilet rooms and lavatories.

THE IMPERIAL SECTION.

The Imperial portion in the centre has a frontage of about 112 ft. and covers an area of 1,100 sq. yds. It contains the Emperor's waiting room and accessory rooms, a hall, two waiting rooms, a porch, a verandah, a corridor, and a passage to the platform, etc. The Emperor's waiting room is a single-storied building. In front is a broad carriage drive having a double approach to the Imperial entrance.

GENERAL ARRANGEMENTS.

About the middle and also in the southern portion there is an entrance to the hotel upstairs.

Two passages run through the building from the front to the rear to right and left of the central portion, and provide for the carriage of luggage and parcels by wagons direct from and to the back of the building.

The remaining portion of the ground floor is used as station office rooms.

As to the basements, the one at the southern end is provided with a boiler room, a kitchen, stores for provisions and table-ware, a scullery, etc., and the one at the northern end with a boiler-room only. The boilers are used for heating purposes and the other facilities for the service of the dining rooms. Arrangements are so made that the meals may be cooked in the basement and brought up in a kitchen lift to the dining rooms on the ground and first floor.

At the southern end of the first floor there are three dining rooms varying in size, one of them being much larger than the other two, so that a very large party can be served at one time. Smaller rooms are provided in combination with these dining rooms, and toilet rooms and lavatories are attached for the use of the guests. The other parts of the right half of the second floor are to be made into a hotel and the rest of these floors used as office rooms.

There are seven staircases leading from the ground floor to the second floor. A lift is also provided in each of these three places. Besides these seven staircases there is a staircase from the ground floor to the first and two from the first to the second floor. The staircase in the Imperial portion is steel-framed and overlaid with marble, while the remaining ones are all of iron.

In the interior of the building, the floor in the Imperial portion is in parquetry or of marble. In the other rooms on the ground floor, tiles or artificial stone or asphalt plates are laid on concrete, and on the first and second floor Spruce Fir, Deal (Sawara) covers fire-proof concrete. The skirtings of each room

on the ground floor are of marble and artificial stone and the panels and chair rails are mainly of Spruce Fir (Hinoki) and Spruce Fir, Deal (Sawara).

Most of the rooms have plaster ceilings, while the picturesque patterns decorating the interior of all the rooms are different in different rooms. The purlins and common rafters of the roof are of thujopsis dolabrata, and the roof is covered with copper plates and slates.

COST OF THE WHOLE ENTERPRISE.

	Yen.
The new Tokyo Station Main building	2,870,142
The new Shimbashi Station Main building	243,164
The new Yokohama Station Main building and other .... about	400,000
New line between the present Shimbashi to Hodogaya .... about	12,000,000
New line between Hamamatsu-cho and Tokyo ..	294,286
New bridge over the river Rokugo, about	670,000
Total	16,477,592

The new stations and tracks were opened to traffic on Sunday, December 20. The Central Station will be christened Tokyo Station. The new station at Yokohama is to be called, for the time being, Takashima-cho Station. The present Shimbashi is to be converted into a freight depot and the new Karasumori Station will be called "Shimbashi."

The present local trains running only between Shimbashi and Yokohama or *vice versa* are to be replaced by electric cars, the other trains running beyond Yokohama remaining as they are at present, for the time being. In Tokyo all the trains and electric cars will depart from and arrive at Tokyo Station and in Yokohama, electric cars will not go farther than Takashima-cho until the city line in Yokohama is completed, while all the trains will call at the present Yokohama Station, except the long distance trains such as for Kobe, Shimonoseki, etc., which will pass Hiranuma as at present.

The above-mentioned traffic system is temporary and a new system will be enforced when the unfinished part of the work is ready for traffic.

Each motor car has four motors each with a capacity of 100 horse-power and the maximum speed is 50 miles per hour. It has a multiple unit controller and a pantograph instead of a pole. The catenary system has been adopted all the way, while the electric system available for traction is from Tokyo Station down to Shinagawa low tension direct current (600 volts) and from Shinagawa beyond, high tension direct current (1,200 volts).

The classes of the cars will be 2nd and 3rd and two motor cars are combined at a running, except in rush hours when a trailer will be put in between the motor cars. The capacity of a train in rush hours will be 2nd class 50 and 3rd class 210 passengers and in the other hours, 2nd class 24 and 3rd class 154 passengers. (*Japan Mail*)

DEVELOPMENT OF RUSSIAN RAILROADS.

According to the Russian press, the Ministry of Ways of Communication has announced that the mileage of Russian railroads is 43, 788, of which 29,594 miles belong to Government railroads. In addition, the railroads in Finland cover 2,430 miles and the Eastern Chinese Railroad, 1,073 miles. There are also temporary lines covering 2,031 miles. Of lines under construction there are 5,657 miles, and of lines for the construction of which permission has been granted, 3,899 miles,

RECEIPTS SHOW LARGE INCREASES.

The gross receipts of all the railroads in the first 11 months of 1913 amounted to G. $545, 900, 000, exceeding the receipts of the corresponding period of 1912 by $40,685,000. The gross receipts of the Government railroads were $364,105,000. The number of passengers was 248,000,000, and the freight carried amounted to 262,000,000 short tons.

During January, 1914, receipts from the sale of passenger railroad tickets amounted to $5,908,595 for Government lines, and $2,028,070 for private lines, compared with $5,303,470 and $1,823,100, respectively, in January, 1913. The receipts for goods carried by slow freight during that month totaled $25,925,-100 for Government railways, and $10,755,260 for private railroads. The corresponding receipts in 1913 were $23,377,910 and $9,742,770. The total gross receipts for the Government railroads were $36,262,180 and for private railways $14,269,105, whereas in January, 1913, they amounted to $32,423,370 and $12,976,970, respectively.

ADDITIONS TO ROLLING STOCK.

One of the principal reasons for the recent delays in the shipment of grain was the insufficient rolling stock on the railways. According to instructions from the Ministry of Ways of Communication, the private railway companies were to add 9,000 new freight cars to their rolling stock at the beginning of this crop season, the new cars being distributed as follows: Southeastern Railways, 3,000 cars; Vladikavkas Railway, 1,850; Ryazan-Ural Railway, 1,331; Moscow-Windau-Rybinsk Railway, 230; Moscow-Kazan Railway, 1,000; Moscow-Kief-Voronezh Railway, 1,700; North Donetzky Railway, 137. However, in consequence of the late placing of orders, a considerable number of these new cars will not be delivered before January 1, 1915.

To prevent such an occurrence in the future and to increase the capacity of the railways in accordance with the expected growth of traffic, the Ministry of Ways of Communication has decided to instruct the private railways to place orders for new cars in time to make them available for the transportation of the 1915 crop. According to the calculation of the ministry, the private railways must construct 18,500 new freight cars, distributed as follows: Southeastern Railway, 4,400 cars; Vladikavkas Railway, 2,850; Ryazan-Ural Railway, 3,400; Moscow-Windau-Rybinsk Railway, 1,650; Moscow-Kazan Railway, 1,825; Moscow-Kief-Voronezh Railway, 1,800; North Donetzky Railway, 2,500; Bielgorod-Sumy Railway, 100.

The Ministry of Ways of Communication reports that 120,000 railway cars have been ordered for the Russian railroads, to be delivered within four years.

THE PHILIPPINE CARNIVAL

The Philippine Carnival is to be held at Manila from January 30 to February 7 this year. In spite of the war it is felt that this Festival which has in past years done so much to make Manila better known to the world should not be abandoned. On the contrary every effort is to be made to make the 1915 Carnival the greatest festival ever known in the Far East. The unqualified support of the Insular Government is being given and there is every reason to believe that the 1915 Carnival will achieve even greater success than its predecessors.

NEW ENTERPRISES AND EXPERIMENTS IN FORMOSA

Several new enterprises were started in Formosa in 1913. Among these may be mentioned the planting of coconuts in the south and experiments with teak forestry also in the south. Both these enterprises give promise of success, though teak seedlings failed to grow in the northern part of the island. Government aid will be given and it is intended to plant 6,000 acres with teak seedlings.

A new fiber material was reported, made from the fruit of a tree and known as "hanshi-men." It seems to be something between cotton and silk. A company with a capital of 1,000,000 yen ($500,000) was organized to grow hemp to compete with the Manila article; the results, however, were not satisfactory. Cotton seems to do well in the vicinity of Kagi, and a short ton of seeds was imported from the United States for planting. Experiments were made with grape cultivation near Shinchiku with very promising results. Whale fishing after the Norwegian system was started off Koshun, south Taiwan. Boats equipped with oil engines (Japanese) are now used by the fishermen of the Pescadores.

TOKYO'S BIG STORE

The Mitsukoshi Department Store, Tokyo.

THE NEW HOME OF THE MITSUKOSHI

In the year 1900 the Directors of the Mitsukoshi Co., Ltd. decided to have a new place of business and forthwith commissioned Mr. Tamisuke Yokokawa, a well known Japanese architect and engineer, to plan and build it, he being instructed to make it the most imposing structure of its kind in Tokyo. The result is a great palace of Art and Commerce, towering high over the Nihonbashi and provided with every appliance to meet the twentieth century requirements. A magnificent white building of seven stories with a spacious basement and a roof-garden, it occupies one of the finest corner sites in the city of Tokyo. It has a frontage of one hundred and twenty feet on Muromachi and a depth of one hundred and eighty feet on Surugacho, while its total height is one hundred and eighty feet. The great edifice is of pure Renaissance style and is built of iron and concrete, while its accommodations are superb, with the very latest equipments and apparatus. Especially fine are its fire prevention devices, the management having been particularly painstaking to make them most complete. Several automatic sprinklers made by Messrs. Mather and Pratt of England are provided at the right places throughout the building. Six passenger elevators from Messrs. Otis of New York, (two for employees only) are in the building, besides an escalator which is situated at the left of the main stair-way. The mail chutes for the convenience of customers and visitors are installed alongside of the elevators. The cash received for goods is conveyed through pneumatic tubes from all parts of the store to the main cashier's desk on the ground floor. Every means is provided for the thorough ventilation of the building. The basement is chiefly occupied by an engine room, a furnace, elevator machine room and also a cold storage room.

The entire eastern side of the first floor is taken up by show windows paned with the finest plate glass specially imported from America. The second and upper floors may be reached by the passenger elevators, the escalator, or by going up flights of staircases of which there are three, the main one running up near the court and the other two in two corners of the building.

The second, third and fourth floors are used as salesrooms. The first floor facing Muromachi, is chiefly devoted to the display of Toilet articles, Perfumery, Shoes and Trunks, Japanese foot-gear and umbrellas. The newly organized department for the sale of Provisions, Wines, Table Wares, etc., is also situated here. The smoking room, to the left of the main entrance, and the Information and Adjusting offices to the right are found on the ground floor. The second floor is devoted to the sale and exhibition of cotton and silk goods, for domestic consumption.

A parlor decorated and furnished in Adams style is situated near the elevators.

A Dress Pattern room and a Special-order room for the use of customers who wish to make selection of goods at their ease, are on the second floor.

The largest part of the third floor is taken up by the departments of Foreign Tailoring, Foreign Tourists, Watches and Jewellery, Children's Stationery, Hair Ornaments, Toys, Shawls, Ready-made articles, &c., &c. The sitting room on this floor is furnished and decorated in Jacobean style.

On the fourth floor are exhibited Japanese and European Furniture in a great variety, including Carpets, Rugs, Upholstering stuffs, Damasks, &c.

On this floor are model rooms, viz. a drawing room in Louis XVI, a dining room in Elizabethan, a bed room in Adams and a library in modern English styles. A large space on this floor is given over to customers' and visitors' dining room.

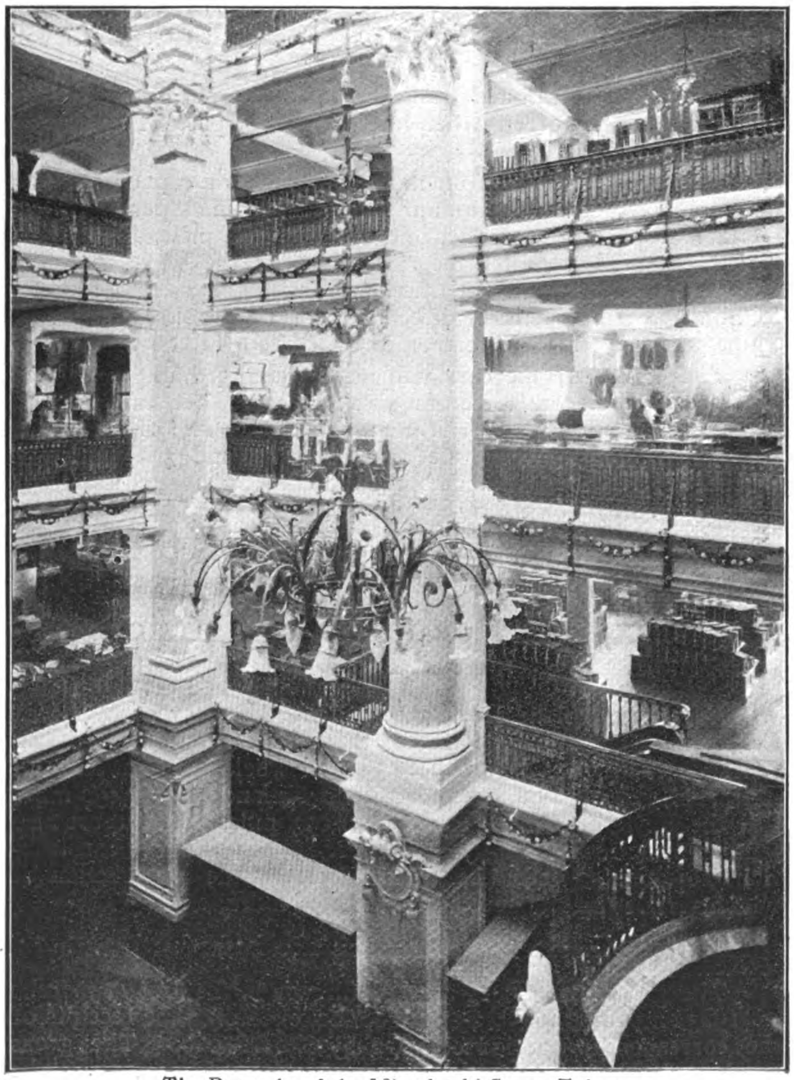
A richly decorated and furnished drawing room in Louis XVI style is situated at the southeast corner, near the passenger elevator, and is intended for the use of distinguished guests and visitors. In the northern part of the floor are situated the Library, Reference rooms, Doctors' office, Designs & Designing rooms, Editors' and Publishing office.

The fifth floor contains a Japanese Fine Arts gallery, a Model Japanese Sitting room, also the newly organized department for selling Japanese teas and ceremonial tea-utensils.

Mail Order Department and Accountants' offices are on this floor, also a department for executing government orders and the Decorators' room at the northern end of the floor.

The Directors' rooms and their council hall are on this floor, as are also separate rooms for the General Manager, the Chief Secretary, and the Corresponding Secretary.

Several desks for cashiers are placed in different parts of the floors and the packages collected from different departments are carried down by means of spiral chutes.



The Rotunda of the Mitsukoshi Store, Tokyo.

The Mitsukoshi: Provision Department.

Fancy Goods and Bag Department.

The roof-garden is one of the attractions of the New Mitsukoshi Establishment. It has a tower from which a fine bird's-eye view of the city may be had, and also a culinary room where all kinds of food are cooked and served in the dining room on the fourth floor. A photographic gallery is located just below the tower, and near-by is a greenhouse, where flowers and plants are sold.

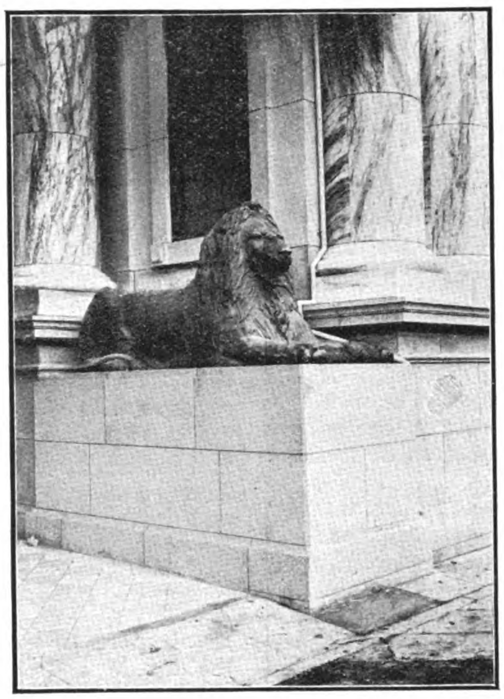
There is a music pavilion situated near a very picturesque arbour surrounded by flower-beds. At the left hand corner of the roof-garden is a torii or gate which leads to a shrine dedicated to Inari, the God of Rice. Just facing the pavilion is a delightful little pond with a fountain and on both sides of the pond are artistically arranged flower-beds of rare flowers.

To the right, up a small flight of stairs you come to a pretty wistariat rellis. Here you can rest and enjoy a fine view of the city.

The corridors are alongside of the photographic gallery and the sky-light roof leading to the greenhouse and the tea-room.

WHITE PILLARED ENTRANCE.

The handsome white pillared entrance is guarded on either side by great bronze lions designed by a famous London artist. Within the entrance, standing at the threshold of the great store, the visitor receives an impression of richness and splendour, of spaciousness and good taste that remains with him throughout his tour of the seven stories and finally is capped by the many arrangements for comfort and pleasure to be found on the capacious roof garden, where amid music and flowers, the cool tinkle of a splashing fountain, and soft breezes blowing from off Tokyo Bay he sits him down to marvel over the combined art and skill that have made it all possible.



Bronze Lion at Entrance to Mitsukoshi Store.

WORTHY OF ANY WESTERN CITY

If for the moment he is inclined to forget he is in Tokyo and imagine he is at Marshall Fields, Chicago, or Sharrods, London, he has only to glance over to the left hand corner and behold the Shinto shrine to Inari, the God of Rice, properly approached through *torii*. If that does not bring him back to Japan he will have to look through one of the dozen telescopes out over the blue-gray sea of tiled roots, with temples and palaces supplying the exclamation points. From this roof garden he can stroll into the photographic department and order anything in the photographic line to be found anywhere in the world. In addition to supplies there are two galleries where portraits are taken and if the sitter desires costumes, whatever period of Japanese history desired will be furnished and the sitter dressed by an expert. In the adjoining hot-house rare plants and flowers are found. Orders for special decorations or gifts may be placed here, with the assurance of prompt execution by a trained and skilful artist.

THE MARBLE STAIRWAY.

A conspicuous feature of the main floor is the magnificent marble stairway that ascends from the main floor of the court up three flights with handsome balcony overhanging from the second floor, the whole lighted by an artistic chandelier of gilt bronze, the first of its kind to be manufactured in Japan and designed and executed by the firm's own artists and workmen. The clock which faces the main entrance is also a home product and is conspicuous for its beauty of design and richness of material, being of solid mahogany and gilt, the whole surmounted by a gilt figure of Mercury several feet high. At the right of the main entrance is the information bureau where foreign visitors will find in addition to ordinary facilities of such a bureau, English or French speaking guides who will aid them in their purchasing.

A BRIEF HISTORY OF THE MITSUKOSHI

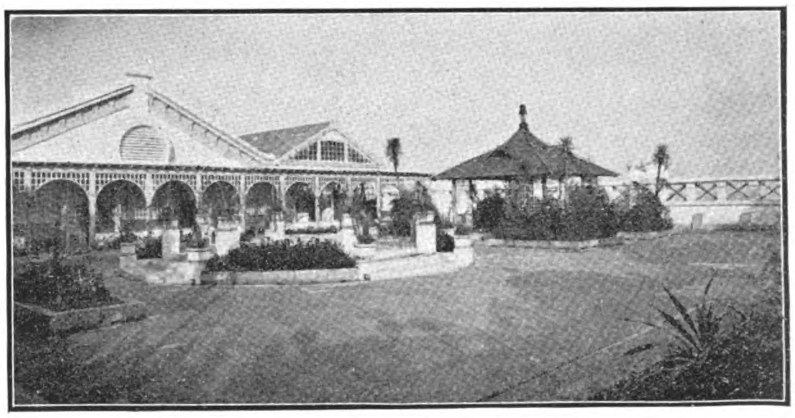
The Mitsukoshi is the oldest and largest retail dry goods store in Japan, its foundation dating back to the first year of Yempo (1673 A.D.) It originally did business under the firm name of Yechigoya, known also as Mitsui Dry Goods Store until its present name was adopted in 1904, with some changes in its organization, its proprietorship still remaining in the famous Mitsui family.

Owing to the high quality of goods handled, the store enjoys world-wide reputation.

It was one of the first Japanese establishments to introduce the Western methods of doing business and to adopt up-to-date appliances.

The policy of the founder of this famous house was, as it has been always that of his successors, to supply the public with the best and most reliable articles at the lowest possible prices. At first the firm dealt exclusively in cotton and silk goods, but later gradually increased its assortment of stock.

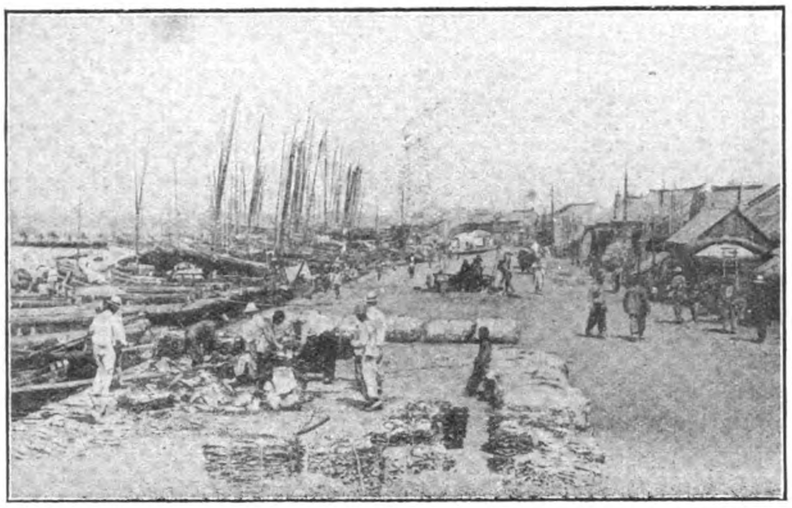
At present the Mitsukoshi employs by far the largest number of employees and does the largest amount of business in this country, of any store carrying most extensive stocks of silks and silk goods, in fact, merchandise of every description to meet the requirements of all classes of people.



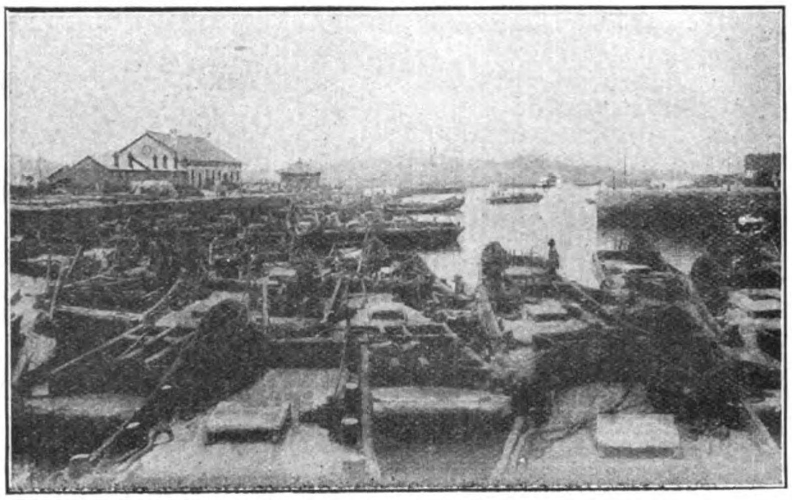
The Roof Garden, Mitsukoshi Store

TRADE CONDITIONS IN CHEFOO

(VICE-CONSUL CRAWFORD M. BISHOP, CHEFOO)



CHEFOO: Fish Market.



Customs Wharf.

The most important event of the past year (1913) was the formation in May of the Chefoo Harbor Improvement Commission for the construction of a breakwater, to be paid for by the collection of a surtax on imports. Engineers have been engaged and have already drawn up a tentative plan which has received the approval of the consular body. Acting under instructions from Peking the customs officials put into operation on July 1 the tariff of surtaxes to cover the cost of construction. Collections for the first six months exceeded previous estimates by 14 per cent, a striking commentary on the increased trade of the port. Included in the tariff are port dues on shipping of $0.015 per ton, and wharfage dues, for steamers, on merchandise of 6¼ per cent of the duty (about 5 per cent). The area of the inclosed harbor is expected to be about 250 acres. The necessity for the breakwater is shown by the fact that work in the harbor was impossible for 33½ days last year on account of weather conditions.

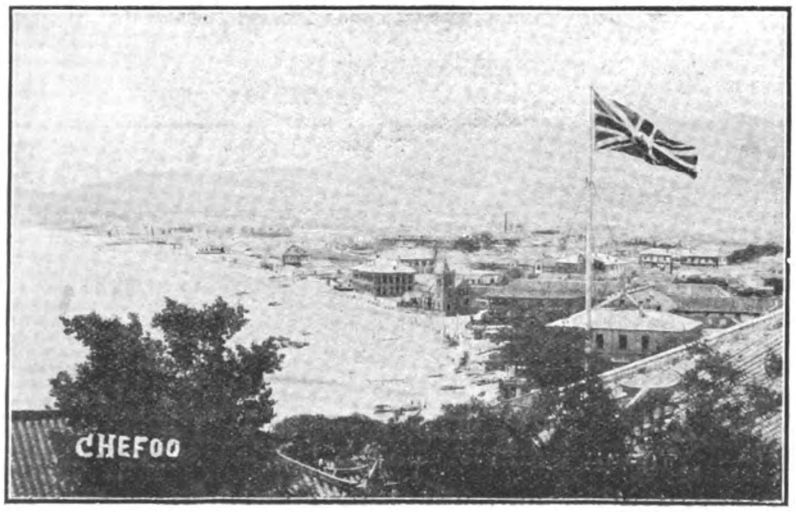
Plans for the construction of a railway into the interior have not made much headway, negotiations between the local people and the central Government having resulted merely in an understanding that the line when built shall be a governmental and not a commercial undertaking. In the meanwhile the Government has granted Germany two important concessions for the construction of railways in the Province; one, from Tsinanfu to the Peking-Hankow Railway near Shuntefu, may be of importance in the construction of a line from Chefoo into the interior.

Both imports and exports improved during the year, and in spite of the prohibition of opium during the latter half of the year, the net value of the trade of the port exceeded that of the preceding year by $2,226,000. The suppression of the cultivation of native opium and the consequent shortage of supplies, created a brisk trade in Indian Malwa opium in the first half of the year. The imports of Malwa opium during that period amounted to over 40,000 pounds as compared with 52,000 for the whole of 1912. From June 15 the imports of all kinds of opium into the Province of Shantung were prohibited. At the same time the authorities prohibited the sale or smoking of opium, and the revenue derived from opium divans, etc., ceased.

An electric lighting plant has been established, and machinery and materials imported, but it is not yet in actual operation. The capital was furnished by Chinese, the engineers are Japanese, and the materials came from Germany and Japan.

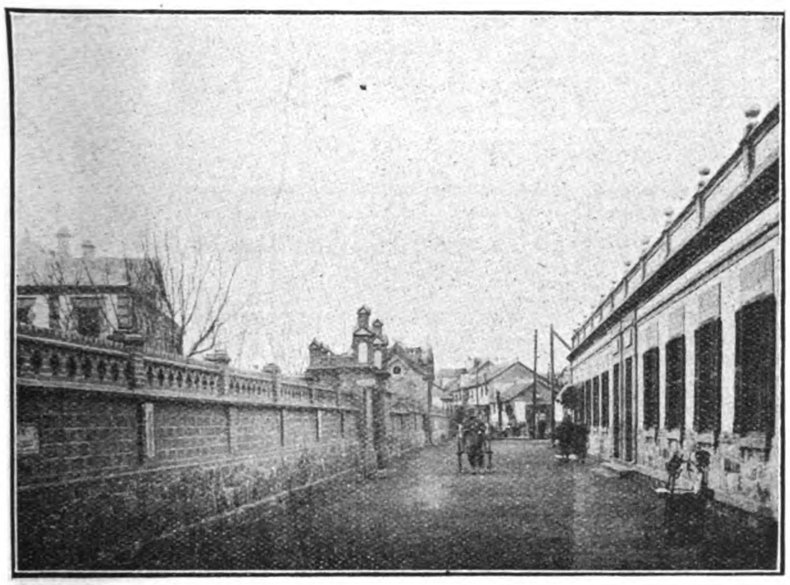
BRANCH OF THE BANK OF COMMUNICATIONS—FOREIGN RESIDENTS.

Imports of treasure decreased by $1,261,400, the lowest for the decade; and exports decreased by $371,000. Improved local conditions and good banking facilities rendered the movement of



CHEFOO: East Beach from Consular Hill.

Consular Hill and Surrounding Country.



Chefoo: Streets in Foreign Settlement.

treasure unnecessary as there has been opened in Chefoo a branch of the Bank of Communications with headquarters in the Board of Communications at Peking.

In Chefoo there are 40 foreign business firms and 1,135 foreign residents. Japan leads, with 20 firms and 483 residents; the United Kingdom is second, with 5 firms and 349 residents; then the United States, with 3 firms and 86 residents. The other countries represented are Austria, Belgium, Denmark, the Netherlands, France, Germany, Italy, Korea, Norway, Russia, and Sweden.

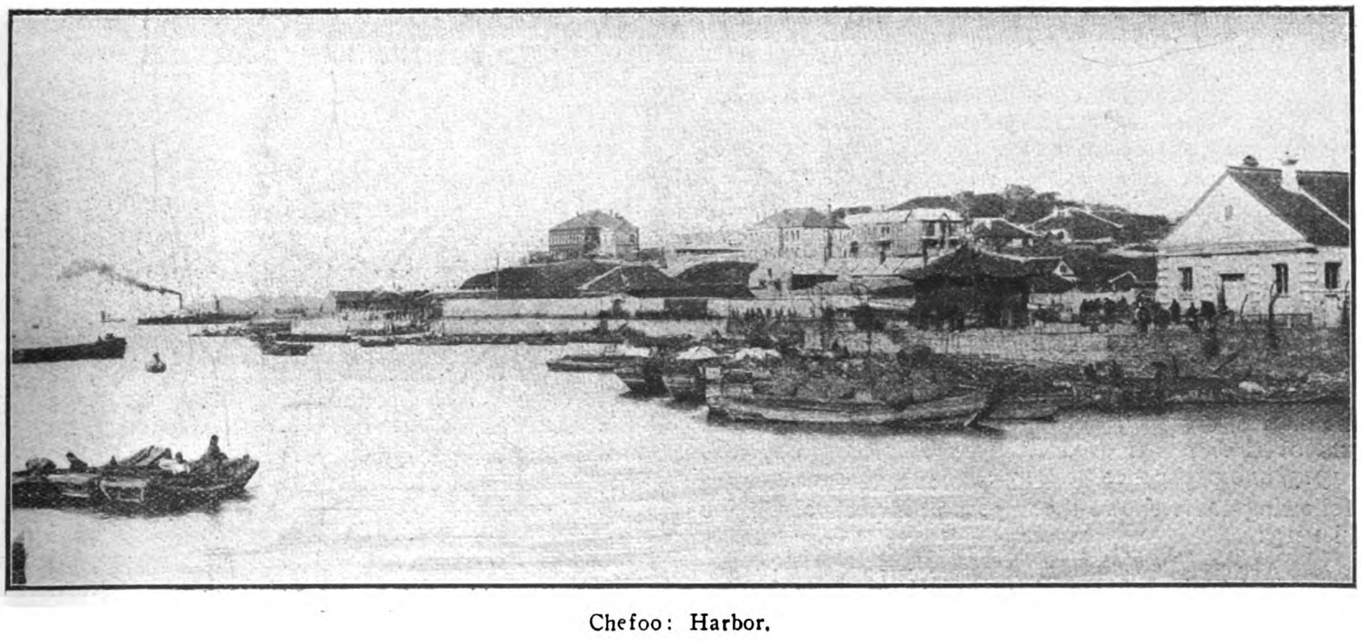
EXPORT AND IMPORT TRADE FOR 1913.

Chefoo's trade with foreign countries was led by Hongkong with a total of $3,689,389. Japan was first in the import trade, with $1,716,656, and Hongkong was first in the export trade, receiving goods valued at $2,205,926. Trade with Russia was increased by $80,000, while Great Britain's total direct trade with Chefoo was increased by $10,843. Trade with Germany, France, and Belgium has increased. With Korea, however, it shows a decline of $465,840. Of the trade with Russia but $56,395 represented imports, whereas imports received from Great Britain amounted to $142,400.

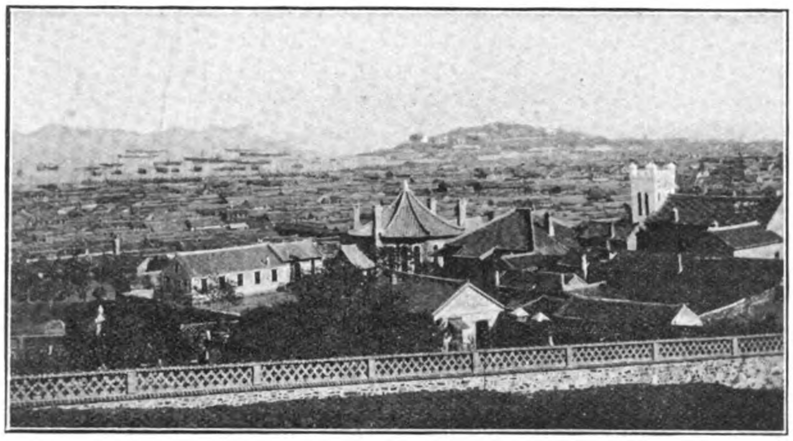
The total foreign imports show a decrease in value from $7,718,021 in 1912 to $7,676,111 in 1913, but owing to reductions in reexports the net imports increased from $6,209,168 in 1912 to $6,607,531, or a gain of $398,353. Apart from opium the import duties were generally a little less than in 1912 and the lowest for the decade. The gross imports of native produce show an increase of over $30,000, and as the reexports also decreased, the net imports of native produce show an increase of $1,189,762. The exports of native produce of local origin was similarly increased by $1,314,367. Thus the net value of the trade of this port shows an increase of $2,902,491—from $20,575,297 in 1912 to $23,477,788 in 1913.

The summary of the import and export trade, as given by the Chinese Maritime Customs in 1912 and 1913, is as follows (conversions being made on the basis of 71.6 cents to the haikwan tael in 1912 and 74.2 cents in 1913):

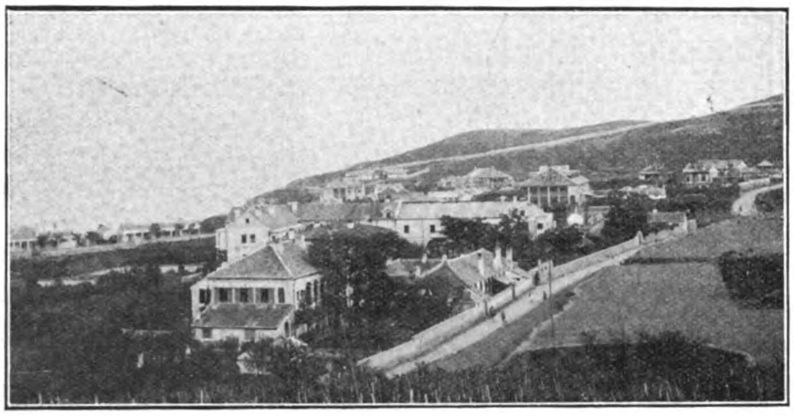
Imports and exports.	1912	1913
Imports of foreign goods:		
From foreign countries and Hongkong	$ 5,154,599	$ 3,867,228
From Chinese ports	4,563,422	3,808,883
Total foreign imports	7,718,021	7,676,111
Total reexported	1,508,853	1,068,580
Net total foreign imports	6,209,168	6,607,531
Imports of native produce	7,702,364	7,732,522
Reexports to foreign countries ..	1,523,431	773,838



Chefoo: Harbor.



Chefoo: View from Temple Hill.



Houses on East Beach, Weihaiwei Road.

Reexports to Chinese ports	1,023,234	613,224
Total native reexports	2,546,665	1,387,062
Net total native imports	5,155,698	6,345,460
Exports native produce of local origin:		
To foreign countries	2,564,359	2,710,252
To Chinese ports	6,646,071	7,814,545
Total exports native produce of local origin	9,210,430	10,524,797
Gross value of trade of port	24,630,815	25,933,429
Net value of trade of port	20,575,297	23,477,788

PRINCIPAL IMPORTS.

The most important direct imports of foreign goods were Japanese sheetings, cotton goods, old iron, rice, coal, flour, ginseng, matches, leather, paper, and sugar. As already stated the net value of imports from foreign countries is in excess of that of the preceding year, and this in spite of the fact that opium was prohibited during the last half of the year. The import of foreign cotton goods, in general, has increased, but a decrease in the imports of American goods and advance in those of Japanese goods is noticeable. Woolen goods were generally about the same as for the last few years. Metals show considerable improvement, especially old iron. There was a decrease of 8,000,000 pounds in the importation of foreign flour, which was replaced by native flour. No direct shipment of American kerosene oil arrived during the year and reexports from stock, amounting to 718,300 gallons, exceeded the imports (271,050 gallons) from coast ports. Nearly 500,000 gallons of Sumatra oil were imported, the largest quantity in several years. The imports of foreign refined sugar, chiefly from Hongkong, showed an increase, also white sugar, but brown sugar showed considerable decline.

Of imports of Chinese goods, rice shows an increase of 12,000,000 pounds. The imports of coal increased, and the imports of cocoons were greater than in 1912, the 1912 winter crop being a very good one both in quantity and quality. The imports of Chinese raw sugars were considerably less than in 1912, brown sugar being 1,407,133 pounds less, but native white sugar was increased by 590,000 pounds. Foreign Hongkong refined sugar is rapidly replacing the native sugars. Of imports through the native customs, beans and Indian corn declined. The imports of timber increased from 64,176 pieces in 1912 to 194,665 in 1913, and paper increased by 1,590,533 pounds.

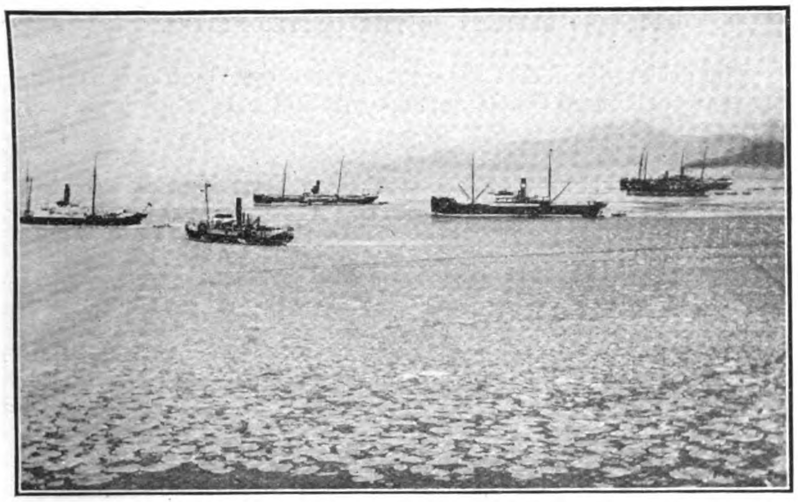
The following table shows the important imports at Chefoo in 1912 and 1913:

Articles.		1912	1913
Opium	pounds	89,859	46,133
Foreign cotton goods:			
Shirtings, plain, gray	..pieces	29,245	35,420
Sheetings ..	.. do	243,144	255,121
Shirtings, plain, white	..pieces	74,588	95,720
Drills	.. do	29,097	18,452
Jeans	.. do	51,203	65,363
T cloths	.. do	38,871	50,190
Cotton, Italians..	.. do	49,481	63,052
Cotton, lastings..	.. do	11,012	15,676
Japanese cotton cloth	yards	708,476	653,945
Other piece goods	..pieces	121,412	137,715
Handkerchiefs ..	..dozen	8,750	16,609
Towels	.. do	28,775	37,374
Cotton yarn ..	pounds	4,910,000	6,719,065
Native cotton goods:			
Sheetings ..	..pieces	38,500	33,544
Cotton yarn ..	pounds	1,801,866	250,533
Nankeens ..	.. do	230,933	322,400
Woolen goods:			
Broadcloth ..	..yards	3,140	3,070
Lastings.. ..	..pieces	190	620
Long ells ..	.. do	665	830
Spanish stripes ..	..yards	3,516	4,312
Foreign metals:			
Iron and mild steel—			
New	pounds	1,687,200	1,202,000
Old	.. do	9,420,800	11,344,133
Steel, bamboo ..	.. do	350,500	730,133
Other	.. do	159,833	238,655

IMPORTS OF NATIVE GOODS.

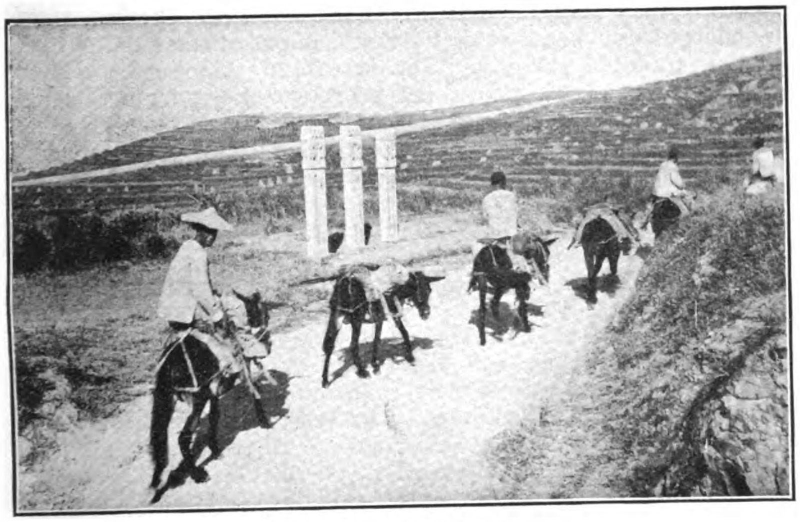
The principal imports through the native customs, consisting of goods received from outlying country districts, were as follows:

Articles.		1912	1913
Beans .. .	pounds	131,654,400	107,348,400
Bean cake ..	.. do	787,800	2,988,666
Corn, Indian ..	.. do	29,066,933	20,414,266
Cotton, raw ..	.. do	295,600	178,000
Mats, reed ..	..pieces	743,066	842,312
Medicines, value	(U.S. currency) ..	$5,692	$14,351
Millet	pounds	5,197,333	5,571,333
Paper	.. do	6,920,000	8,510,533
Samshu ..	.. do	678,800	828,933
Silk:			
Raw, wild ..	.. do	2,666	..
Cocoons ..	.. do	15,402,800	12,392,000
Timber	..pieces	64,176	194,665
Vermicelli ..	pounds	5,506,100	6,673,066



Chefoo: Harbor in Winter.

Chefoo: Coolies Bringing in Produce.



Chefoo: Mule Transport.

EXPORT TRADE.

Local produce exported to foreign countries and to Chinese ports increased in value in every case. While the exports of beans, bean oil, and bean cake decreased, fresh eggs, most of which go to Vladivostok, increased. The exports of salt fish nearly doubled those of the preceding year. Fresh fruit, which in 1912 had shown a decided increase over 1911, decreased to less than the figures for 1911 on account of unfavorable weather conditions There was an increase of over 2,000,000 pounds in the exports of groundnuts, but shelled nuts decreased over 6,000,000 pounds, partly due to prohibitive freight rates to certain foreign markets. Exports of silk and cotton lace goods increased $14,840. The exports of hair nets amounted to $11,130, an increase of more than $4,452. These nets are made of imported Chinese human hair specially prepared in Europe. The exports of cattle decreased, and amounted to only 96 head, the value of exported cowhides being nearly $100,000 less than in 1912. Silk of all kinds shows an increase, excepting steam filatures, as none of these are now in operation. The increase in hand filatures was 213,333 pounds. Nearly all the local establishments were running throughout the year. Silk refuse and waste increased over 20 per cent. owing mainly to the fashions prevailing abroad which called for velvets and plushes. The net increase in the year's business in pongee was 104,533 pounds; Australia has also become a customer for this class of goods. The prices of 1912 were not maintained, as qualities were not good on account of the shortage in Nanshans. Prices of Shantungs fell gradually, and at the end of the year were lower than they had been for many years. No straw braid was shipped during the year. The figures for vermicelli were higher than they had been for 10 years, showing an increase of 7,354,677 pounds over 1912.

LIST OF PRINCIPAL EXPORTS.

The principal exports from Chefoo are beans and bean cake, vermicelli, groundnuts, fresh fruits, raw silks and pongees, eggs, salted fish, and licorice. The figures for these and other important exports of Chefoo in 1912 and 1913 are shown in the following table:

Articles.		1912	1913
Almonds	pounds	620,800	867,600
Bean cake	do	49,591,733	43,981,600
Beans	do	483,866	274,533
Beef	do	442,400	..
Caps, felt	pieces	9,257	5,208
Cattle	head	362	96
Clothing, cotton	pounds	631,333	276,133
Dates	do	1,248,933	2,315,066
Eggs, fresh	pieces	5,745,090	6,145,310
Fish:			
Dried	pounds	512,933	340,933
Salt	do	4,270,000	8,083,066
Fishery products	do	324,800	494,133
Fruits, fresh	do	7,909,200	7,704,133
Groundnuts:			
Unshelled	do	4,183,333	6,898,666
Shelled	do	26,276,933	18,771,733
Hides, cow	do	138,100	40,133
Licorice	do	1,491,600	2,065,200
Mats	pieces	26,376	39,965
Medicines	pounds	557,366	936,533
Oil:			
Bean	do	728,800	1,079,866
Groundnut	do	66,533	39,800
Prawn skins	do	414,000	260,666
Seed, sesamum	do	307,466	19,466
Shoes and boots	pairs	138,429	119,040
Silk:			
Raw, white	pounds	266	5,733
Yellow	do	28,133	30,800
Raw, wild, hand	do	1,528,266	1,743,466
Steam, raw, wild	do	115,133	78,866
Refuse, raw, wild	do	1,604,466	1,960,800
Pongees	do	855,200	959,733
Soda, native	do	57,600	128,533
Straw braid	do	133	..
Vermicelli	do	29,066,933	36,421,600
Walnuts	do	296,153	511,466
Yeast	do	92,933	51,333

FOREIGN SUNDRIES.

Aniseed	pounds	24,200	53,466
Bags, all kinds ..	.. pieces	258,325	300,964
Beche de mar ..	pounds	76,300	102,933
Buttons	.. gross	3,238	3,801
Cigarettes ..	.. value	$53,415	$46,261
Dyes, analin ..	.. do	$42,934	$67,137
Flour	pounds	22,306,400	14,314,266
Glass, window ..	.. boxes	2,986	4,317
Isinglass ..	pounds	30,000	44,666
Lead, white ..	.. do	129,600	..
Matches ..	.. gross	1,988,897	2,239,076
Mats, straw ..	.. pieces	185,834	274,002
Needles	.. mille	32,727	101,941
Oil, kerosene:			
American ..	gallons	3,666,200	..
Sumatra ..	.. do	198,910	498,700
Paper	pounds	981,600	1,334,800
Pepper, black ..	.. do	262,000	171,660
Sapan food ..	.. do	39,200	..
Seaweed ..	.. do	5,350,533	4,515,866
Soda, ash and crystal ..	do	4,261,994	2,356,666
Sugar	.. do	20,721,400	18,308,266

NATIVE SUNDRIES.

Arsenic	pounds	134,666	226,533
Beans	.. do	57,214,800	76,128,533
Books, printed ..	.. do	92,933	146,933
Button, brass ..	.. gross	475	812
Cigarettes ..	pounds	272,233	339,333
Coal	.. tons	56,844	66,655
Cotton, raw ..	pounds	418,133	491,866
Flour	.. do	13,863,733	25,127,333
Mats	.. pieces	45,232	24,676
Hemp	pounds	381,066	545,866
Medicines ..	.. do	260,500	655,600
Mushrooms ..	.. do	22,533	61,200
Oil, wood ..	.. do	1,305,866	1,499,600
Paper:			
Joss	.. do	932,133	..
Other	.. do	9,051,500	898,533
Preserves ..	.. do	153,066	225,333
Rice	.. do	35,591,066	47,647,646
Samshu	.. do	2,846,600	4,035,600
Silk:			
Raw, wild ..	.. do	231,466	149,733
Cocoons ..	.. do	16,733,500	21,391,733
Piece goods ..	.. do	11,200	42,000
Pongees ..	.. do	1,500	2,000
Soda	.. do	1,134,400	808,666
Sugar, brown ..	.. do	4,951,733	4,134,600
Tallow, animal ..	.. do	..	105,066
Tea	.. do	642,800	1,199,866
Tobacco ..	.. do	711,167	1,035,999
Varnish	.. do	16,533	37,000

TRADE WITH THE UNITED STATES.

The total exports to the United States increased from $26,276 in 1912 to $72,576 in 1913, an increase of $46,300. The exports of silk increased from $21,832 to $65,633, a gain of $43,800. The new tariff law of the United States has undoubtedly stimulated trade. The duty in the United States was changed from $3 per pound to 45 per cent. ad valorem. Thus, 33/34 Shantungs, 32 ounces, which formerly paid $6 per piece, now pay only $1 per piece. Lace and lace goods increased from $916 to $3,139. The exports of hair nets declined, while no human hair was shipped. Walnuts reappeared in the list of exports to the United States.

DECLARED EXPORTS TO THE UNITED STATES.

The declared value of the exports from the Chefoo consular district to the United States during 1912 and 1913 is given in the following table:

Articles.	1912	1913
Hair, human	$ 815	..
Hair nets	1,395	$1,140
Lace and lace goods	916	3,140
Ore, gold, silver, and copper	1,318	..
Silk	21,833	$65,633
Walnuts	..	2,664
Total	26,276	72,577

Silk to the amount of $420 was exported to Hawaii; as against $641 worth in 1912. Lace and lace goods were exported to Hawaii to the amount of $522 in 1913; none was exported in 1912.

DIRECT IMPORTS FROM THE UNITED STATES.

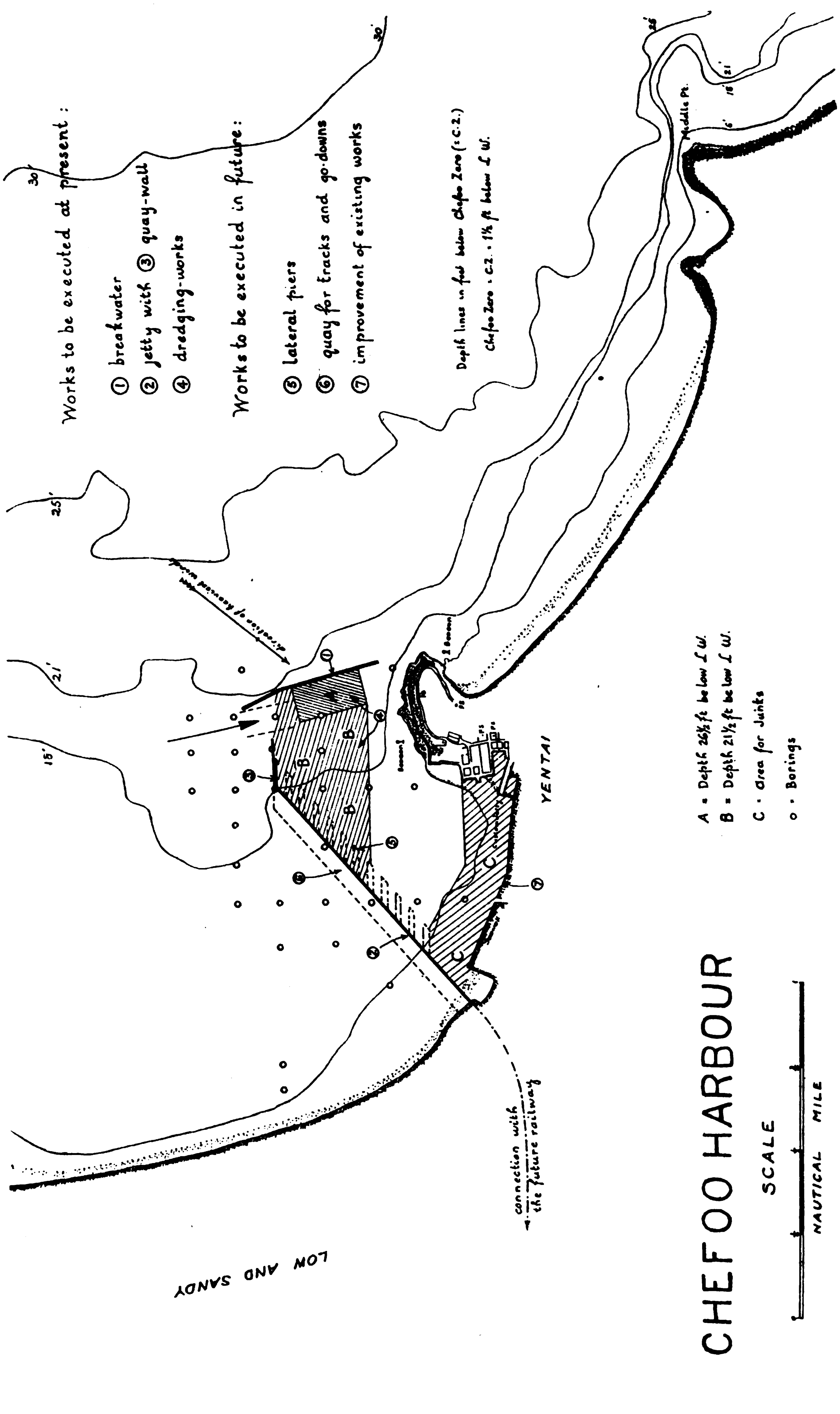
The total value of the direct imports from the United States is given as $10,085. This does not represent the total imports of American goods, most of which are imported and pay duty at Shanghai or Hongkong, and are reexported to Chefoo.

SHIPPING—PRESENT GROWTH AND PROSPECTS.

There was considerable activity in shipping at Chefoo during 1913, including increases in the number of vessels and in tonnage; the net increases were 373 steamers and 319,313 tons. An important feature has been the increase of Japanese vessels, both in number and tonnage, Japan having 1,749 steamers, representing 994,047 tons, and 486 steamers under inland steam navigation rules, representing 184,194 tons, or a total of 2,235 steamers, of a total of 1,178,241 tons. The United States had 60 steamers, representing a tonnage of 84,536. The second revolution in the south of China caused a temporary suspension of the service of the China Merchants' Steamship Co. in the summer, but there was an increase of 60,000 tons under the Chinese flag. The inland waters traffic also shows an improvement both in number and in tonnage. The native customs report that 500 more junks entered in 1913 than during 1912. This may dispel the fear that the charges for breakwater surtaxes might disturb the native shipping trade of the port. The increase in shipping also helps to explain the excess of 14 per cent over the estimates in the amount of breakwater taxes collected. Statistics show a slight decrease in both arrivals and departures of native passengers during the year, probably caused by the strict surveillance to which passenger traffic was subjected on account of the revolution in the south.

OPPORTUNITIES FOR AMERICAN TRADE IN SHANTUNG.

The Chefoo Harbor Improvement Commission has announced that final plans giving full details for the construction of the breakwater will be ready in the spring, and that after a loan has been secured active work will be started. American firms will have an opportunity to compete with those of other countries in the bids for supplying the materials. The date of the beginning of the construction on the proposed Chefoo-Weihsien railway is still uncertain, the matter being controlled by the Board of Communications at Peking. The early operation of the electric-lighting plant will create a demand for electrical appliances for household uses, the consulate having already received inquiries regarding them. The recent opening of the port of Lungkou, near Chefoo, which has been opened by China voluntarily to foreign trade and which some fear may be a detriment to Chefoo, may, however, tend to stimulate trade with the interior. The lowering of the duty on silk through the operation of the new tariff act should continue to stimulate the export of these goods to the United States. The early opening of the Panama Canal should increase trade with the United States from all the ports of China.



CHEFOO HARBOUR
SCALE
NAUTICAL MILE
Works to be executed at present:
① breakwater
② jetty with ③ quay-wall
④ dredging-works
Works to be executed in future:
⑤ lateral piers
⑥ quay for tracks and go-downs
⑦ improvement of existing works
Depth lines in feet below Chefoo Zero (=C.Z.)
Chefoo Zero = C.Z. = 1½ ft below L.W.
A = Depth 26½ ft below L.W.
B = Depth 21½ ft below L.W.
C = area for Junks
o = Borings
YENTAI
LOW AND SANDY
connection with the future railway
Middle Pt.

AFFORESTATION AT TSINGTAU

Since modern forestry has, as is generally recognised, reached its highest development in Germany, says the *Japan Herald*, the results obtained in this sphere in the German colony in the Far East have often been admired; thus some particulars as to the afforestation and forest gardens at Tsingtau may be of interest.

As is now the case almost everywhere in China, forests are deficient; the heights in the neighbourhood of Tsingtau fifteen years ago were almost entirely bare and denuded; even grass was almost entirely lacking as the natives uprooted nearly all for fuel. After the disappearance of the protecting grass cover the violent rains of the summer had swept away the scanty remaining soil and formed on the slopes deep ravines; the bare rocky heights stood up with sharp peaks and gaps, reminding the beholder of the Spanish sierras. Moreover the long period of drought, the gross carelessness and ignorance of the Chinese as to the benefits afforded by forests, and the lack of educational materials as to the native trees and shrubs all contributed to make the labors of German experts more difficult. Many extensive and laborious preparations had to be completed before the afforestation itself on a large scale could be begun. Soil had to be carried from the valleys and ravines to fill the holes which had been dug for the transplanted trees; the loose stones were gathered and formed into a protection for them, in order that in the future, as the weathering continued, the roots might bind together the soil that was forming. Especially important was the placing of numerous dams in the ravines, which had to be ready at the beginning of the rainy season. These, in July and August, collected a sufficient supply of water with which, with the help of innumerable coal-oil cans, the young plants could be watered so that they could stand without damage the long dry period from April till the end of June. The parts of the ravines lying below the dams were protected from further falling-in of the walls and further denudation of the soil by rains and, after being partially filled up, could also be gradually planted.

For the afforestations trees from all the four quarters of the earth except Africa, which might for climatic reasons be serviceable, were experimentally planted. But of these experiments, numbering in all about 650 with trees in seedbeds, only a few have succeeded. The winter, or the wetness of the summer, or the long periods of drought, destroyed many experimental plants; moreover the Chinese country people were ignorantly hostile to the experiments. Very often the laboriously planted and watered young plants were torn up again at night. In spite of opposition and difficulties the aim has now been attained. The heights in the neighbourhood of Tsingtau, especially the Iltisberg, at the foot of which lies the main forestry station, are wooded, the rocks are clad with green, and the vegetation and the thick grass prevent further inundations. In the level places there are already something like the young forests of Germany, and in summer there is in some places an arch of vegetation thick enough to shut out the sky. Re-plantations have also begun; the colony's requirement in fuel-wood is covered and timber is already being sold to the mines: in short an afforestation of the greatest importance as a model has succeeded.

The timber trees planted at Tsingtau are the Japanese white pine, the larch, cryptomeria, cedar and other conifers, and of foliage trees especially the chestnut, ash, maple, plane, oak, elm, alder, and acacia. For forestry on a large scale, however, only the pine and the two last-named are of much importance. The young growth of pines which covers most of the heights is good and, in spite of the unfavorable nature of the soil, by far better than that of the native pines; their further thriving must be awaited before a safe opinion can be given as to their availability; but even a moderate crop of the first generation will, in view of the high prices of wood in the Far East, pay a good interest on the enterprise. As the Chinese country-people are very careless with regard to risks of fire, and as pine trees easily catch fire, one often sees in the plantations, among the larger areas planted with pines smaller ones interposed planted with foliage-trees in order to make this danger easier to meet. In the Orient the pine is often used as a Christmas-tree, and specially fine specimens are occasionally sent as far as Sydney or Singapore or far into the interior. Plane-trees and maples are used only for ornament. The oak is not suitable for Tsingtau and of the willows only the silver willow is grown for osier-work. By the watercourses, however, in the neighbourhood of the hamlets and in other places most suitable for them, especially at Haipota, are valuable thickets of alders thriving splendidly. But the most important and the commonest tree in the Tsingtau forest and also in the gardens and streets of the colony is the acacia. Its abundance has caused the English to nickname the Colony "Acacia Peninsula"; and the tree has been widely cultivated in North China in imitation of the Tsingtau example. In 1910 alone 150,000,000 acacia plants were raised there, to judge from the amount of seed imported. The acacia grows quickly and lustily and is easy to plant even for unskilled Chinese. It suits the ground excellently and demands little attention, being hardy to the climate. Its growth is shown by the following example: an acacia plantation set in 1902 on the south-eastern slope of the Iltisberg yielded good mining-timber in the felling of 1907 and again in 1912 and in the autumn of 1913 the new trees are again from 12 to 15 feet high.

The acacia yields excellent fuelwood, also good mining-timber; its flowers have for some time been used by the poorer Chinese country people as a substitute for tea, and quantities of them are sent into the interior. In order to obtain charcoal, which is much used in China, the forestry officials have for some time been using a process which unites German and Chinese experiences and methods of charcoal-burning, and from these experiments also acacia appears to be the best material. The good results which the Tsingtau Forestry Bureau obtained with the acacia caused the Administration of the Shantung Railway, of the Ching-Ching Mines and of the Kaiping Mines, partly under German direction, to afforest their suitable land with acacia in order later on to save the costly import of timber.

Just as formerly the Chinese Governors of the northern provinces sent officials to Tsingtau to be educated, so a committee at Shanghai sent six Chinese forestry-students to the German colony in order first to spend a year in the practical work and then to study the science of forestry for two years. The Administration of the Tientsin-Pukow Railway sent eight of their station-masters to go through a number of practical courses and then put their knowledge to use on the railway lands. Later a Japanese commission was sent by their Government to Tsingtau to study the German model for the afforestation near Seoul; they received thorough and detailed instruction.

The first task, the afforestation of the environs of Tsingtau, is finished; the green hills and valleys offer to the traveller a picture rare in China, and to the inhabitants and visitors to the bathing resort, beautiful shady walks. Up till now about 1,200 hectares have been afforested. Steps were to be taken to afforest the mountains in the interior of the Protectorate which are Treasury lands and not cultivated by the Chinese. From fifty to a hundred hectares will be brought under cultivation annually; the Prinz Heinrich Berg and the Laushange Mts. can be afforested for two-thirds of their height as the soil is not bad. The Chinese inhabitants will be employed in the work in the slack times of their ordinary field labours and will be paid in kind by presents of fruit and mulberry trees. The forestry work can thus be done cheaply and will especially attract the Chinese from the fact that the mountain-slopes which they have hitherto despised as worthless will be made to yield them profit.

A feature of the Tsingtau Forest is the great Forest Garden, covering about 80 hectares, which contains tree and plant nurseries, orchards, seed-beds of all kinds and forcing-houses.

As above stated, about 650 experiments have been made in transplanting trees, and now about 20 are still made annually. At present, experiments are being made with the forest trees of Eastern North America, also 121 kinds of ornamental and useful shrubs have been transplanted. The more valuable plants are put in especially suitable and protected places—warmer, moister and

deeper-lying grounds. The vegetable beds are filled in almost every season of the year with seedings of the most varied kinds and in some of the glass-houses, protected against cold winds, the winter temperature without artificial heating never falls below 3° C. In these may be seen small palms, chrysanthemums, ornamental-leaved plants and rare flowers. In the seed-beds, experiments have also been made with industrial and fodder plants, tobacco and cotton, camphor and olive, sesame, lucerns and many other, sand the results noted. As a curious detail it may be stated that Metaplexis, a plant of the older Euphorbiaceae which is found as a climber in hedges and on fences, has threads in its seed-capsules which have been investigated by Chemnitz weavers and pronounced suitable for the production of a cheap kind of artificial silk.

In fruit culture, also, the Forest Garden has made numerous experiments. German and Californian fruits have been tried together; of 63 varieties of apple and 68 of pear, however, after repeated experiments only 11 and 8 respectively have been found suitable to the climate. Cherries have succeeded well; there are 48 varieties at Tsingtau; plums cannot withstand the hot rainy season and do not thrive. Berries of various kinds almost all do well. The attempts to grow peaches and apricots were abandoned, as these fruits are already grown to perfection by the Chinese. Experiments in grape growing were also made, but further attempts have been left to the Austrians at Chefoo, whose experiments (which are kept secret) promise to be successful. Of the twelve varieties grown there ten have been successful also at Tsingtau.

The ground at the Forest Garden was of course most carefully prepared; during the first years especially it was thoroughly dug, weeded and raked; also natural and artificial manures have been abundantly employed on it after exact scientific investigation of the soils. The results of the manuring, for example in the increased weight of the grains of cereals, made a great impression on the Chinese.

One of the chief difficulties was the fight against insect pests, both the native and those which were introduced with fruit from America; thus 60 beetle larvæ were found in a cherry-tree. Forest pests have also been a great danger for a long time, but carbolineum, bisulphide of carbon and arsenic, used at the right times and in right proportions have, after many failures, at last had a permanent success.

The pecuniary means for the numerous and extensive experiments of the Forest Bureau have always been placed at its disposal, in right appreciation of the great importance of this work of civilization, by the Reichstag and the Government, which have also furthered the work in every other possible way.

The importance of this work is so universally recognised that it is needless to dwell upon it. It may, however, be mentioned that a comparison, especially with the results of English forest-management, even at Hongkong, as shown by the detailed reports of export German foresters, shows still more clearly the value of what has been accomplished at Tsingtau. This has been recognised by the English themselves, for recently they have been carrying on Indian forestry on German principles and partly under German management. For China, also a country notoriously poor in timber, this work may be a great blessing.

VITICULTURE IN SHANTUNG

Aside from being the center of fruit culture in China, Shantung province raises large quantities of fine grapes, and promises to become a very important wine-making district. In the neighborhood of Tsingtau, mainly on the southern slopes of the Laushan Mountains, many grapes are grown for the fruit only. Large quantities are sent to Shanghai and other places annually, a variety closely resembling the tokay of California predominating. White grapes are also grown, a sort of sweet water and a kind called "markobrunner" being the most common; but blue and black grapes are not found.

Apparently no attempt to produce wine has been made here, but in the Chefoo region, in northeastern Shantung, the industry has progressed much further. On the hills surrounding that city are many terraced vineyards, and an extensive winery has been in operation for years. White wines, red wines, and champagnes of many varieties are made, but none of the products were placed on the market until the present year.

CHEFOO VINEYARDS AND WINE MAKING

Concerning the wine-making establishment at Chefoo, Mr. Chang Yu, a wealthy Cantonese, conceived the idea of cultivating grapes in China for the purposes of an extensive wine trade. The necessary sanction was obtained from the authorities in 1895. Land was bought on the hills near Chefoo and planted to varieties of grapes from all wine-producing countries under the direction of a European expert, who is still in charge. More land is constantly being acquired in the immediate vicinity and planted as soon as bought, but the price of suitable territory has gone up considerably, mainly because other Chinese have gone into the business. Philoxera is stated to have attacked some of the varieties, but never to a disastrous extent, most of the vines seeming apparently immune.

Finding that the supply of native grapes was irregular, while the price was not inexpensive and the quantity of sugar contained therein was not sufficient to produce good wines, Mr. Chang first imported American grape vines so that he could get the necessary supply from his own vineyard. But the attempt resulted in a failure owing to damage done by insects.

In 1902, he imported vines from Austria and planted them on his ranch. The experiment, which was conducted under the supervision of a foreign expert—an Austrian nobleman (Baron M. von Babo) proved to be successful, and consequently the area of the vineyard has been increased from year to year, until now 12 acres of ground are under full cultivation. A glass factory was established under the same management some years ago, where necessary receptacles are being manufactured.

Each fall the entire crop is taken to the winery on the outskirts of the town, and after production the wine is stored in large casks, constructed in sections in Austria, shipped to Chefoo, and set up in the cellars. Every barrel is plainly marked with the variety of wine it contains, together with the year of its production. The cellars took two years to complete and are built below the level of the sea. They are lined with concrete, as it was found that they were otherwise being constantly flooded. As the work was commenced over ten years ago, there is now a large supply of wine on hand, but the first sales were not made until this year. The market is to be exclusively the Chinese coast.

HOG BRISTLES IN CHINA

One of the large exports from China, is black hog bristles. The bulk of these bristles come from the northern China and Manchurian ports, and from there generally find their way to Shanghai, where they are collected by large dealers, assorted into lengths of from 2½ to 6 inches, if they have not been previously assorted, and then exported, to be made into paint brushes and other articles. The assorted bristles are made up into little round bundles, averaging from 2 to 3 inches in diameter.

While the bristle business, on the whole, is increasing, it is, like many other trades, tending to centralization in the large ports, and the smaller coast places figure less and less in the exportation, the main reason being that the facilities for sorting are not sufficient in the small ports. A dealer in an outport who can collect several hundred pounds of bristles a month finds it more to his benefit to send his lots to a large Shanghai wholesaler than to go to the trouble and expense of having them sorted and bundled and then waiting to get together a large enough lot to make it worth his while to export. The China hog, on the whole, is not a large producer of bristles, all his body, except a strip down the back and a larger spot on the neck, being covered with hair only, while the more northern hog of Manchuria and Siberia has a larger part of his skin covered with bristles.

Under normal conditions it takes some 100 coolies to sort and bundle about 50 pounds of bristles a day, averaging, say, one-half pound a man per diem. The total exports of bristles from Shanghai in 1912 were 36,070 piculs pounds, valued at Tls. 2,962,398 this being largely composed of receipts from other ports.

Direct export from Tsingtau during 1913 amounted to 490,000 pounds, valued at $270,802 gold.

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CLOSING THE DOOR IN CHINA

An Historical and Critical Survey of Sino-Japanese Relations with special relation to the recent demands of the Japanese Government which, if accepted, would subvert the sovereignty of China and destroy the principle of Equal Opportunity for the Commerce and Industry of all nations in the Republic.

To understand Japan's object in making an extraordinary set of demands upon China it is necessary, or at least desirable, to take a brief glance back at the relations of the two countries in the past few decades. Old China had a profound contempt for old Japan. She did not change her views even after the war of 1894 had resulted so disastrously to the Chinese naval and military forces. It was quite true, as was frequently remarked at the time, that in an Empire of magnificent distances the southern and western provinces neither knew nor cared what was happening in the north. The Empire, while apparently strong and firmly based, was in reality ready to fall to pieces. The Sino-Japanese War awakened the other Powers to the fact, and with a realization of her weakness her difficulties began. Cessions of territory were forced from her; railway concessions which obviously jeopardized China's integrity were demanded and granted; and a relatively large indemnity was claimed by Japan as compensation for the retrocession of the Kwantung Peninsula.

Then in due course came the Boxer madness. It is idle now to go into the argument whether this was not a supreme and splendid, though brutally conceived, effort on the part of a people driven to distraction by the threatened loss of national entity, to retrieve themselves. However this may be, the effort was a ghastly failure; the proud Manchu Court had to flee ignominiously to Sianfu; the historic walls of Peking were pierced by the foreign engineer, and into the sacred enclosure of the Temple of Heaven the despised foreigner took his ponies and disported himself. In this punishment of the Chinese people for the sins of the Court, Japanese soldiers for the first time fought shoulder to shoulder with European troops. And from that moment Japan demanded a position of special and acknowledged importance in relation to China. The assumption of a special position had, in fact, already been shown in a marked manner after the cession of Formosa (or Taiwan) to Japan. The Japanese look at most things from a military point of view and they realized that the possession of Taiwan enabled them to dominate the province of Fukien. They very soon showed that they intended to secure that dominance by every available means. Hundreds of Japanese in the guise of small traders or priests penetrated into the interior of the province, mapping it out with the thoroughness with which the Japanese do most things they undertake. The preparations made against the day of necessity elsewhere and on other occasions were made in Fukien.

The Alliance with Great Britain and the result of the Russo-Japanese war confirmed Japan's position as a kind of special guardian of China. As residuary legatee of Russia, Japan became possessed of rights in the Liaotung Peninsula and the railway zone in Manchuria which necessarily involved closer association with the Peking Government. Abandoning any attempt to adhere to the strict chronological sequence of events, it is interesting to recall that Japan was not backward in signalizing her accession to a position of special importance. The "Tatsu Maru" incident, the Autung-Mukden Railway dispute, and the Chientao discussions, all showed that Japan intended to make China feel that she had to deal with a Power infinitely stronger and quite determined to make use of that strength whenever she deemed it necessary. In the position she took up in regard to each of these questions Japan adopted an attitude of cynical brutality which disgusted those observers in the Far East who were close enough to things to see what was really happening, yet sufficiently distant to gain the right perspective. Much of the so-called "anti-Japanese feeling," of which some of the publicists of Japan have complained, has been directly due to Japan's own actions. There is a spirit of fair play in the world, and bystanders are not inclined to countenance a continued course of bullying and browbeating of the weak by the strong. Note should be taken of this by those interested.

From this time onward Japan's attitude to China has been that of one wholly determined to exploit his neighbour's domain, and to lose no chance of fixing a cause of quarrel. The Nanking incident, which could have been arranged with almost any one of the other countries with which China has associations, with the minimum of difficulty, was made the occasion by Japan of humiliating demands and a demonstration of force. It is true that the demands were in some degree modified owing to advice given by a nation which may find it necessary to give even stronger advice in the near future. The whole incident showed, however, that Japan cynically avowed her intention to treat China with a lack of consideration that she would not have displayed to any other sovereign Power.

We have omitted reference to Korea and Japan's treatment of that ancient Empire. But as Korea was once a vassal state of China it is as well to place on record that Japan fought two wars ostensibly to secure Korea's independence, which Japan solemnly guaranteed, only to annex the country when she felt assured that there would be no interference by any other nation. This must not be taken as advancing the view that the loss of independence has involved any material loss to the Korean people. Rather has there been a gain. The currency of the country, which was in a deplorable condition, has been placed on a sound basis; the legal administration, which was a scoff and a by-word, has been reformed and, if not perfect, is distinctly better than it used to be; while necessary public works have been initiated and in many instances completed. There is no intention to belittle in any way

the excellent results that have attended Japanese administration in Korea. What we wish to emphasize is that she gained possession of the peninsula by diplomatic sharp practice and a demonstration that her leading national principle is that might is right. It is well to bear this in mind when considering China's prospects of fair treatment from Japan.

THE PRESENT CRISIS

Having glanced at the relations of China and Japan in the remoter past we must now turn to the events which have led up to the present crisis. There are other incidents that might have been mentioned, notably the murder of Chinese policemen by Japanese soldiers in Manchuria. On that occasion it will be remembered Japan showed herself averse to making reparation, though she was obviously in the wrong, and only did so at last ungraciously and inadequately. But it is not the immediate purpose to pile up instances of arrogant unfriendliness displayed by Japan towards China. Our purpose has been served if we have shown that there has been a succession of such instances extending over a long period, while, as far as our knowledge goes, there has been no solitary case in which Japan showed disinterested friendliness for her neighbour.

His Excellency Lu Chen-hsiang
Chinese Minister of Foreign Affairs who represents China in the negotiations connected with Japan's demands

When war broke out in Europe the situation in the Far East was peculiar China, naturally, was in no sense interested and she took the course of declaring her neutrality at the first opportunity. But part of China's territorial possessions, namely a zone of about 200 square miles surrounding the Bay of Kiaochou, had been leased to one of the belligerents, Germany, who had turned it into a naval and military base. The town of Tsingtau was fortified against attack by land and sea. A small but powerful German fleet was in Kiaochou Bay when hostilities began, and an Austrian cruiser was also in port. The British, French and Russians had in Far Eastern waters a fleet of preponderant strength. As far as military forces were concerned Germany had a garrison of about 3,000 regulars at Tsingtau, while the British had about a similar number of European and Indian troops in North China and Hongkong. Russia had troops available at Vladivostok, and France had a considerable force in Indo-China. There seemed to most people, if hostilities unfortunately took place in Chinese territory, no reason why the European allies should not cope with the situation. It was generally hoped, however, that this would not be necessary. Germany might without loss of dignity and prestige, have handed over the Kiaochou Protectorate to China to bide the issue of the war in Europe; interned her soldiers, and sent her fleet forth to meet what fortune it might. Had this been done much loss of life and destruction of property would have been prevented and endless complications averted. It is said, with what truth we are unaware, that Germany had begun negotiations with China for the return of the Protectorate when the Japanese ultimatum to Germany was suddenly sprung upon the world.

The position of Japan in relation to the belligerents has to be considered. As the ally of Great Britain, Japan had certain obligations. One was to preserve the peace of the Far East; another to maintain the territorial integrity of China. Neither of these called for the intervention of Japan, but a third bound the allies to protect the interests of each other if threatened. This gave Japan her excuse and opportunity. It is quite true that British shipping in Far Eastern waters was menaced as long as a fleet in being remained at Tsingtau—there is no evidence, however, that Japan's services were requisitioned by Great Britain and there is some reason to suppose that they were not. The British Foreign Office, though naturally preoccupied by the more important situation in Europe, has its own officials whose especial care is the Far East. They would undoubtedly realize at once that Japanese intervention would cause most serious future complications, and we may be pardoned, therefore, for doubting whether the British Government ever acquiesced in Japan joining in unless it were that faltering kind of affirmative given when the gentleman of the road calls upon his victim to stand and deliver. But Britain acquiescent or not, Japan presented her ultimatum on August 15 in the following terms:—

"We consider it highly important and necessary in the present situation to take measures to remove the causes of all disturbances of peace in the Far East and to safeguard the general interest contemplated by the agreement of Alliance between Japan and Great Britain in order to secure a firm and enduring peace in Eastern Asia, the establishment of which is the aim of the said agreement. The Imperial Japanese Government sincerely believe it their duty to give advice to the Imperial German Government to carry out the following two propositions. Firstly, to withdraw immediately from Japanese and Chinese waters German men-of-war and armed vessels of all kinds and to disarm at once those which cannot be so withdrawn, and secondly, to deliver on a date not later than September 15 to the Imperial Japanese authorities, without condition or compensation, the entire leased territory of Kiaochou with a view to the eventual restoration of the same to China. The Imperial Japanese Government announce at the same time that in the event of their not receiving by noon, August 23, 1914, the answer of the Imperial German Government signifying unconditional acceptance of the above advice offered by the Imperial Japanese Government, they will be compelled to take such action as they may deem necessary to meet the situation."

The language in which the ultimatum was couched left it beyond the bounds of possibility that Germany would accept the "advice" so gratuitously, if not graciously, offered. Those whose memories took them back to the events immediately following

the Sino-Japanese War at once recognized a remarkable similarity between the wording of the ultimatum and the "advice" offered by Germany, Russia and France to Japan in regard to the retrocession of the Liaotung Peninsula. As was to be expected Germany made no reply whatsoever to Japan's ultimatum and the latter on the day the ultimatum expired, August 23, declared war. As a slight digression it is permissible to suggest a point that it is believed has not hitherto been raised. What would have happened if Japan had elected to remain as an interested onlooker? As has been shown, the Allies—Great Britain, France and Russia—had a superior, but not greatly superior, naval force. They also had available sufficient troops to invest Tsingtau. In all probability instead of Vice-Admiral Kato declaring the blockade of Kiaochou, as he did on August 28, the blockade would have been declared much earlier by the ranking officer of the allied naval forces. It may also be assumed that instead of steaming out into the Pacific, the German Admiral, feeling he had a sporting chance, would have given battle. Probably the battle would have resulted in favour of the Allies, in which case few if any of the German ships would have remained afloat and such as did would have been so badly shattered that they could not become again effective. Similarly assuming a German victory, it would have been won at such a cost that Germany would not have been in a condition to harry the Allies' coastwise shipping until repairs and refitting had been completed, in other words until a long period had elapsed during which a new allied fleet would have gathered. If this be anything like a fair supposition of what would have taken place if Japan had not intervened, then there would have been no enormous destruction of British shipping in the Indian Ocean; no dislocation of the whole programme of maritime sailing, and no loss of the Good Hope and Monmouth. The speculation is at least interesting.

Mr. Eki Hioki
Japanese Minister at Peking, who represents Japan in the negotiations connected with Japan's demands

Complementary to Japan's ultimatum is the Declaration of War by the Emperor of Japan, which was couched in the following terms:—

> "Issued at Tokio, August 23, 6 p.m.
>
> "We, by the grace of Heaven, Emperor of Japan, seated on the Throne occupied by the same dynasty from time immemorial, do hereby make the following proclamation to all our loyal and brave subjects:
>
> "We hereby declare War against Germany, and we command our army and navy to carry on hostilities against that empire with their strength, and we also command our competent authorities to make every effort, in pursuance of their respective duties, to attain the national aim by all means within the limits of the law of nations.
>
> "Since the outbreak of the present war in Europe, the calamitous effect of which we view with grave concern, we on our part have entertained hopes of preserving the peace of the Far East by the maintenance of strict neutrality, but the action of Germany has at length compelled Great Britain, our ally, to open hostilities against that country, and Germany is at Kiaochau, its leased territory in China, busy with warlike preparations while its armed vessels cruising the seas of Eastern Asia are threatening our commerce and that of our ally. Peace of the Far East is thus in jeopardy.
>
> "Accordingly our Government and that of his Britannic Majesty, after full and frank communication with each other, agreed to take such measures as may be necessary for the protection of the general interests contemplated in the Agreement of Alliance, and we on our part, being desirous to attain that object by peaceful means, commanded our Government to offer with sincerity an advice to the Imperial German Government. By the last day appointed for the purpose, however, our Government failed to receive an answer accepting their advice. It is with profound regret that we, in spite of our ardent devotion to the cause of peace, are thus compelled to declare war, especially at this early period of our reign and while we are still in mourning for our lamented mother.
>
> "It is our earnest wish that by the loyalty and valour of our faithful subjects peace may soon be restored and the glory of the Empire be enhanced."

JAPAN'S PROFESSIONS OF GOOD FAITH

It would be idle to deny that anxiety was felt, particularly in China and America, in regard to Japan's intentions. When it was generally understood that, in view of Germany's action in calling her reservists from all parts of the Far East to Tsingtau, the Protectorate would be attacked by an international force, no alarm was felt as it was recognized that the ultimate fate of Tsingtau would be decided by the event in Europe. But when Japan intervened and it became clear that, by reason of her possessing adequate forces in immediate readiness, the task of reducing the fortress would be left almost entirely to her, real uneasiness was felt in many quarters, not least in China and America. Probably it was to allay this feeling that Count Okuma, the Premier of Japan, sent on August 15, the day the ultimatum was delivered, the following message to the East and West News Bureau, Brooklyn:—

> "Japan's proximity to China breeds many absurd rumours; but I declare that Japan acts with a clear conscience, in conformity with justice, and in perfect accord with her ally. Japan has no territorial ambition, and hopes to stand as the protector of peace in the Orient."

This he followed, when addressing a gathering of Japanese business men at Tokyo on August 18, with the following explicit statement:—

> "Japan's warlike operations will not extend beyond the limits necessary for the attainment of the object of the defense of her own legitimate interests.
>
> "The Imperial Government will take no such action as could give to a third party any cause for anxiety or uneasiness regarding the safety of their territories or possessions."

Evidently realizing that anxiety had not yet entirely been

dispelled, on August 24, Count Okuma sent a message to the American people through *The Independent*, the well-known magazine, in the following terms:—

"I gladly seize the opportunity to send, through the medium of '*The Independent*,' a message to the people of the United States, who have always been helpful and loyal friends of Japan.

"It is my desire to convince your people of the sincerity of my Government and of my people in all their utterances and assurances connected with the present regrettable situation in Europe and the Far East.

"Every sense of loyalty and honour oblige Japan to co-operate with Great Britain to clear from these waters the enemies who in the past, the present and the future menace her interests, her trade, her shipping, and her people's lives.

"The Far Eastern situation is not of our seeking.

"It was ever my desire to maintain peace, as will be amply proved; as President of the Peace Society of Japan I have consistently so endeavoured.

"I have read with admiration the lofty message of President Wilson to his people on the subject of neutrality.

"We, of Japan, are appreciative of the spirit and motives that prompted the head of your great nation, and we feel confident that his message will meet with a national response.

"As Premier of Japan, I have stated and I now again state to the people of America and of the world that Japan has no ulterior motive, no desire to secure more territory, no thought of depriving China or other peoples of anything which they now possess.

"My Government and my people have given their word and their pledge, which will be as honourably kept as Japan always keeps promises."

There is no reason to suppose, and it would be improper to suggest, that the Japanese Premier was not in genuine earnest. Count Okuma is a civilian, is not a member of either of the great military clans which have so long dominated in Japan, and is, moreover, the head of the Japanese Peace Society. In all probability he was anxious to reassure the world in regard to Japan's designs and meant to carry out his promises to the letter. Unhappily it is the War Party, headed by Prince Yamagata, that is the ultimate court of appeal in Japan. Count Okuma, a civilian, may give what promises and assurances seem good to him, and if they assist the War Party's plans they are regarded with benignity.

Japan evidently thought that it was particularly necessary to allay any suspicion on the part of America, as is evidenced by Count Okuma's message. But as there might not unnaturally be some apprehension of a nearer Japanese approach to the Philippines, in view of the fact that Germany had island possessions in that portion of the Pacific, steps were also taken to reassure the American public in this regard. Thus we find that an announcement to the following effect was presented to the Secretary of State at Washington from the British Foreign Office:—

"It is understood that the action of Japan will not *extend to the Pacific beyond the China seas*, except as may be necessary to protect Japanese shipping lines in the Pacific, nor in Asiatic waters westward of the China seas, nor in foreign territories except territory in German occupation on the Continent of Asia."

On October 6 the Navy Department at Tokyo announced that a Japanese squadron had landed bluejackets on Jaluit Island, the seat of Government in the Marshall Archipelago, and the same day the following official declaration was made by the Japanese Embassy at Washington:—

"The Japanese Embassy has just received an official cablegram from Tokyo practically confirming the report of the destroying of the military establishments on Jaluit Island, one of the German bases in the Marshall Archipelago, which appeared as a Tokyo Telegram in a morning paper.

"In the above connection, it may be recalled that the German men-of-war have been making their appearance in the Pacific and the South Seas and have been disturbing the shipping routes ever since the outbreak of the present war. This fact at last compelled the allied fleets of Japan and Great Britain to decide upon expeditionary measures to keep the routes clear, as was recently reported in the press. In the light of this fact it may be safely concluded that the action taken by a portion of the Japanese expeditionary squadron above referred to is nothing but a step toward the fulfillment of the expeditionary mission."

Nothing further was heard of the occupation of the Marshall Archipelago until November 18, when an official statement in the following terms is said to have been made by the Australian Minister for Defence:—

"The Japanese Government has intimated to the British Government that it is ready to hand over the Marshall and other German islands in the Pacific, which are temporarily occupied by the Japanese, to an Australian force. The British Government has informed the Japanese Government of its intention to act accordingly. A special Australian force will be despatched to the islands and will remain in occupation until the termination of the war, when the matter of the ultimate disposal of the islands will be a question for consideration by the allied powers.

"As the Federal Government will have the responsibility for the occupation of islands it is necessary that not only the military occupation, but such matters as trade, food supply, and postal and commercial affairs be investigated and organized. Commander Pethebridge will accompany the force to make the necessary arrangements."

It will be seen from these citations that Japan was scrupulously careful to cast reassurances and promises broadcast. So insistent was she upon the excellence of her intentions that some cynically-minded persons were inclined to quote, "Methinks thou dost protest too much."

PROMISE AND PERFORMANCE

The first active step taken by Japan for the reduction of Tsingtau was the landing of a force at Lungkow, a port on the Northern coast of Shantung, west of Chefoo. The precise reason why Lungkow was chosen as the place of debarkation has never been officially explained but, as pointed out in a recent article in the FAR EASTERN REVIEW, the Japanese had for some time been paying particular attention to this port. It may be assumed that the choice was not made at haphazard. China protested, but protests from China were not likely to affect the Japanese War Party. Then China, very wisely, followed the precedent created in the Russo-Japanese War and voluntarily declared a War Zone within which the belligerents could carry on operations. It is specially to be noted that this zone was declared, not by agreement with Japan, as some Japanese papers have claimed, but as a voluntary act designed to save as much as possible of the population of Shantung from the terrors and inconveniences attending warlike operations. Japan, as is her wont, said nothing, but went ahead with her military preparations. The unfortunate Chinese residents in the line of march had soldiers quartered upon them and supplies requisitioned. Of the stories of outrages committed by the Japanese troops it is unnecessary to speak, beyond remarking that some may have been exaggerated, but, anyway, in war such things occur. Protests in regard to the violation of China's sovereignty were unheeded, but with admirable self-restraint the Chinese Government contented itself with placing its protests on record, notwithstanding constant urging on the part of those whose zeal outran their discretion that strong action should be taken. As the Japanese tightened their strangle-hold upon Tsingtau they began also to move westward. First a force was sent to Weihsien. China vigorously protested. Weihsien was well outside the War Zone. Japan ignored the protest, or rather declared that military necessity dictated her action, and sent her troops further west to Tsinanfu, the capital of the Province of Shantung. At this period many of those who had watched the course of events in Manchuria during and after the Russo-Japanese War began to have an inkling of Japan's real designs.

In due course Tsingtau fell, on November 7 to be precise, to the assault of the Japanese army and navy aided to a small extent by British naval and military units. The world, or at least the Far Eastern world, waited with breathless anxiety to see whether Japan would honour her promises. It was recognized that it would not be immediately possible for the port to be opened nor for a civil administration to be appointed. The harbour and the adjacent waters had to be cleared of mines, an inventory of Government property in Tsingtau had to be made and many things had to be done that required time. The Far Eastern world watched and waited. They are still watching and waiting, but they have learned something.

The administration of Tsingtau had been taken over solely by the Japanese military authorities, either by arrangement with the British or otherwise. Nothing of real importance occurred until the question of reopening the Maritime Customs Office at the port arose. It is true that British merchants who had carried on business at Tsingtau were held up at Tsinanfu and refused permission to return to the port, and it is also true that a Japanese

line of steamers was granted permission to run to Tsingtau while this privilege was forbidden to the steamers of other nationals. At the moment of writing, however, British vessels have been allowed to enter Kiaochou Bay. But these things were not regarded as being of very great importance, and it was thought that matters would soon adjust themselves. The Customs incident, however, betrayed the course of action that Japan proposed to adopt. It has to be remembered that by virtue of an agreement concerning the establishment of a Maritime Customs Office at Tsingtau, concluded between the German Minister at Peking and the late Sir Robert Hart, then Inspector-General of Customs, Germany obtained certain privileges in regard to the personnel of the Tsingtau Customs staff. The first three clauses of the agreement were as follow:—

1.—The Commissioner or the Chief of the Maritime Customs Office at Tsingtau is to be of German nationality. The Inspector-General of Customs will come to an understanding with the German Legation at Peking in case of appointing a new Commissioner.

2.—The members of the European staff of the Maritime Customs Office at Tsingtau shall, as a rule, be of German nationality; in case, however, of a suddenly occurring vacancy or of temporary requirements of the service, members of other nationalities may be provisionally sent to Tsingtau.

3.—The Inspector General of Maritime Customs will inform the Governor of Kiaochou beforehand about all changes in the staff of the Customs Office at Tsingtau; this, however, does not apply to the employees of the Chinese staff.

China, having accepted Japan's promise of her intention to hand back Kiaochou at its face value, considered that the situation in regard to the Customs would be met were she to appoint a British Commissioner in the usual way—namely upon the nomination of Mr. Aglen, the Inspector General of Customs—and she proposed the British Commissioner at Mukden. Japan at once entered an objection. China then nominated the Japanese Commissioner at Soochow for the post, with a Briton as Deputy Commissioner, but again Japan objected. She also objected when it was proposed to eliminate the proposed British Deputy Commissioner but to have the staff composed half of Britons and half of Japanese. Then China appointed as Commissioner at Tsingtau Mr. Tachibana, who was the Commissioner of Customs at Dairen, but again Japan objected, and reiterated a previous declaration that the only satisfactory solution was for *Japan* to appoint a Commissioner and staff from her own people, presumably the Imperial Japanese Customs Department. This remarkable suggestion would, if acted upon, have involved the injection into China's Customs service of foreign officials who in many cases would have taken precedence for promotion over men who had served China long and faithfully. Obviously China could never consent to such an impairment of her sovereign rights and, moreover, even were she inclined to do so she would have engaged herself in serious trouble with the Treaty Powers. It has to be remembered that in the Peace Protocol signed after the Boxer outbreak the Customs revenue was assigned to the service of the Indemnity. Kiaochou, even when in German occupation, never ceased to be Chinese territory, and the Customs revenue from there went into the Chinese Treasury just as did the Customs revenue from Amoy or any other Treaty port. It was, therefore, impossible to accede to the Japanese demand. Sincerely desirous of effecting a compromise that would meet Japan more than half way, China proposed that Mr. Tachibana be accepted by Japan as Commissioner, and that eight members of the Imperial Japanese Customs Department should be permitted to join the Chinese Customs service in the lowest grade.

It is difficult to conceive in what way China could have done more to meet the views of Japan, but, although no official announcement has been made it is understood that officials of the Imperial Japanese Customs Department are now in charge of the Customs Office at Tsingtau. In this manner did Japan signalize her respect for the rights of China and the Treaty Powers.

It has already been mentioned that Japanese troops had been sent as far west as Tsinanfu, thus bringing the whole of the Shantung Railway and the adjacent properties under the control of Japan. The Shantung Railway Company is a private concern registered in Berlin. Nominally the company is Sino-German, but there is reason to suppose that did any Chinese shareholders exist they were men of straw employed to support the fiction that the concern is not solely German. The rights given to Germany by the Kiaochou Convention were as follow:—

1. The Chinese Government sanctions the construction by Germany of two lines of railway in Shantung. The first will run from Kiaochau and Tsinanfu to the boundary of Shantung province via Wei-hsien, Tsinchow, Pashan, Tsechuen, and Suiping. The second line will connect Kiaochau with Chinchow whence an extension will be constructed to Tsinan through Laiwu-hsien. The construction of this extension shall not be begun until the first part of the line, the main line, is completed, in order to give the Chinese an opportunity of connecting this line in the most advantageous manner with their own railway system. What places the line from Tsinanfu to the provincial boundary shall take in en route is to be determined hereafter.

2. In order to carry out the above-mentioned railway work a Chino-German Company shall be formed, with branches at whatever places may be necessary, and in this company both German and Chinese subjects shall be at liberty to invest money if they so choose, and appoint directors for the management of the undertaking.

3. All arrangements in connection with works specified shall be determined by a future conference of German and Chinese representatives. The Chinese Government shall afford every facility and protection and extend every welcome to representatives of the German Railway Company operating in Chinese territory. Profits derived from the working of these railways shall be justly divided pro rata between the shareholders without regard to nationality. The object of constructing these lines is solely the development of commerce. In inaugurating a railway system in Shantung, Germany entertains no treacherous intention towards China, and undertakes not to unlawfully seize any land in the province.

4. The Chinese shall allow German subjects to hold and develop mining property for a distance of thirty li from each side of these railways, and along the whole extent of the lines. The following places where mining operations may be carried on are particularly specified along the northern railway from Kiaochau to Tsinanfu, Weihsien, Pa-shan-hsien and various other points; and along the southern Kiaochau-Tsinan-Chinchow line, Chinchow-fu, Taiwuhsien, etc. Chinese capital may be invested in these operations, and arrangements for carrying on the work shall hereafter be made by a joint conference of Chinese and German representatives. All German subjects engaged in such works in Chinese territory shall be properly protected and welcomed by the Chinese authorities, and all profits derived shall be fairly divided between Chinese and German shareholders according to the extent of the interest they hold in the undertakings. In trying to develop mining property in China, Germany is actuated by no treacherous motives against this country, but seeks alone to increase commerce and improve the relations between the two countries.

Into the question of the right of Japan to seize and work under military administration enemy's private property we do not propose to enter at this juncture. This matter was gone into fully in the November, 1914, issue of the FAR EASTERN REVIEW. We only quote the items of the Convention relating to the railways so that readers may have the opportunity of referring thereto when we come to deal with the Japanese demands presented to the President of China on January 18, 1915.

TAKING OFF THE MASK

If Japan's attitude in regard to the Customs Office at Tsingtau had heartened those who had consistently distrusted her and discouraged those who believed in her good faith, the War Zone dispute confirmed the beliefs of the one and finally dissipated the hopes of the other. As already explained, China, of her own volition, with the object of saving the people of Shantung as far as possible from the horrors of war, declared a War Zone. It is incidentally to be remarked that Japan never showed the slightest intention of circumscribing her operations within the zone, but proceeded as if Shantung generally were Japanese territory over which China had no rights whatsoever. When the German garrison of Tsingtau had been safely conveyed to Japan and imprisoned and the Japanese military administration at Tsingtau had become firmly established, that is to say about two months after the surrender, there was obviously no further need of a War Zone. It was created solely because acts of war were to be committed. When it became impossible for any further hostilities between Japan and Germany to occur there was clearly no object in maintaining a War Zone. Moreover, it was pretty generally known that Japan was acting in a very high handed manner. She was amongst other things exercising a censorship over telegrams, not only within the War Zone, but what was even more indefensible, in Tsinanfu itself, the provincial capital. China consequently sent a Note to the Japanese Government announcing that she proposed to rescind the declaration of the War Zone. A wave of indignation immediately swept over

Japan. The vernacular press, never distinguished for a superabundance of dignity, literally frothed at the mouth. Chinese "insolence," "arrogance," "consistent unfriendliness to Japan" were denounced in the most unmeasured language. Demands were made that the Japanese Government should adopt a "strong" attitude and that China should be made to pay for her presumption in daring to think that she could exercise her sovereign rights as an independent state. The Opposition party in Japan, which for months past had been twitting the Government with the weakness of its foreign policy, redoubled its efforts, and, in view of the approaching elections, proclaimed itself as a sturdy upholder of the "rights" of Japan in China.

It is necessary thoroughly to understand the position to deal briefly with the political situation in Japan. In the late Diet the strongest party numerically was the Seiyukai, which was utterly opposed to the Okuma Government. In former days a Government did not care whether it had a majority in the Diet or not. So long as it possessed the confidence of the Emperor it could treat with amused disregard even an adverse vote by the popular chamber. Thanks to the sagacity of the late Prince Ito, the Diet possessed no real power. But things have changed. At the present day even a man with the prestige of the late Prince Katsura did not dare to retain office in the face of an adverse majority in the Diet. The military operations against Germany for a time saved the Okuma Government, but it was known that at the first opportunity after the fall of Kiaochou attempts would be made to put a period to its existence. This was the condition of affairs when the Diet reassembled early in December. Jingo Opposition members at once began to harry the Government in regard to its foreign policy, especially in reference to China. On December 9, Baron Kato, the Minister of Foreign Affairs, made a reply to an interpellation by an Opposition member in connection with the retention of Tsingtau by Japan, which has given rise to much discussion. Baron Kato said:—

> "I understand that what Mr. Ogawa means in his permanent solution of the Chinese question is to secure the maintenance of China's territorial integrity. This policy has been followed by the Japanese Government since many years ago and the present ministry does not intend to diverge from this fundamental line of policy. Though Mr. Ogawa asked whether the Government is going to restore Tsingtau to China or not yet the question is to be settled in the future and I am not in a position to give any definite reply to this question.
>
> "Mr. Ogawa then inquires if the Government has entered into any contracts with a foreign country, which contract might compel Japan to restore Tsingtau to China in any way. But I assure you that the Government has never entered into such a contract with any foreign countries about the question of Tsingtau. The reason for which the Government in its ultimatum requested Germany to restore the leased territory to China is just similar to that for which years ago the three powers jointly requested Japan to restore to China the Liaotung Peninsula which Japan had occupied during the China-Japanese War. Mr. Ogawa said that if Germany accepted the Japanese ultimatum, the result would have been rather difficult for Japan, because there is a special contract between Germany and China as to the restoration of Tsingtau to China. But as you may know from the terms of the Government's ultimatum to Germany our intention was to cause Germany to restore Tsingtau to China without any conditions or compensations whatever."

In view of the explicit assurances originally given this utterance came, to say the least, as a surprise. Its ambiguity led to apprehension in some quarters in which it had not previously been felt and to the confirmation of the suspicions of others who had throughout regarded Japan with distrust. But the very ambiguity of the utterance was considered by some to be hopeful. The Diet, it was known, was to be dissolved and an election held. What more natural than that a Minister, anxious to secure votes, should play down to the Jingoistic sentiment of the man in the street, who otherwise would be led by the frothy mouthings of the Opposition to range himself against the Government? Baron Kato's statement in no way committed the Government to the retention of Kiaochou, though, as was probably designed, that impression may have been given to the unthinking. The election is pending. In that fact may be found the explanation of many recent events.

The outcry against China's proposal to abolish the War Zone came as an entire surprise to the Chinese Government into whose mind—at that time—had never entered the supposition that Japan proposed to supervise China's domestic administration. However, under Japanese pressure, China abstained from issuing a proclamation abolishing the zone, and the anomalous position persists to this day of a strip of territory being set apart for warlike operations which ceased months ago. Within this zone, at Kiaochou and for the full length of the Shantung Railway, Japan, that is to say the Japanese military authorities, do practically what they please.

FOREIGN AND JAPANESE VIEWS

It may be well, at this stage, to consider what views were held by foreigners and representative Japanese in regard to the retention or non-retention by Japan of Kiaochou. Among British in the Far East it may safely be said that the predominant sentiment was a sincere hope that Japan would keep her promises in the spirit as well as in the letter. But in other quarters such hopes were not entertained. We take an extract (the article is fully reproduced in this issue) from a most informative article written by Mr. Lewis Einstein, whilom First Secretary of the American Legation at Peking, in the "Journal of the American Asiatic Association," in which he considers, not only the Kiaochou question, but the general bearing of America's friendship with China and sincere good-will towards that country in its relation to Far Eastern politics. The conclusion that he arrives at, namely that America can best help China, not by isolated action, but by harmonious co-operation with other Powers who wish to preserve China's territorial integrity and independence, is undoubtedly sound. Mr. Knox's proposal to neutralize the railways of Manchuria would never have been made if he had consulted the other Powers interested. As a result of that well-meant but unfortunate proposal, the fetters that bind Manchuria were the more securely fastened. But at the moment it is with Mr. Einstein's views in regard to Tsingtau that we are principally interested. To quote:—

> "Unless British participation in the siege has been sufficient to exercise a countervailing restraint it is not probable, after the sacrifice of life and treasure which the capture of Tsingtau must entail, that the territory will be restored to China. Japanese diplomacy is a past master in the art of amphibious arrangements characteristic of the East. If it is to be judged by its previous record in the Liao-tung peninsula unless it should demand elsewhere equivalent compensation it will be more inclined to take over the long lease on which German tenure reposed. Reiterating previous assurances regarding the "Open Door" and reaffirming respect for the integrity of China, it probably will take calm possession of its conquest and proceed to develop the careful German beginning in the same systematic way as in Korea and Southern Manchuria. The problem to realize is the extent to which this occupation affects us and what course of action commends itself in consequence."

Turning from the foreign view it is interesting to see what the more enlightened Japanese are thinking on the subject. A responsible periodical, the "Japan Financial and Economic Monthly," has published the views of several gentlemen whose words carry weight.

Baron Shibusawa, the famous banker, gives an expression of opinion that we would like to believe is widely held in commercial and financial circles in Japan. His attitude may be summed up by the following quotation:—

> "Although Tsingtau was attacked, captured and held, the Japanese were obliged to do so for the sake of our alliance with Great Britain and peace in the Far East. But about the disposal of the matters which follow in the wake of this, the Japanese people must do their utmost to establish the most perfect sort of friendship with the Chinese and promote the trade between the two nations."

There speaks a man who recognizes that the policy of the Mailed Fist is certain to be ineffective in building up the community of economic interests that should subsist between China and Japan. Unfortunately the opinions of men such as Baron Shibusawa do not seem to be shared by any considerable number of the other gentlemen whose views were obtained by the "Japan Financial and Economic Monthly."

Thus we find Baron Sakatani, formerly Minister of Finance, and now Mayor of Tokyo, saying:—

> "How to dispose of Tsingtau and the South Sea Islands (the Marshall Archipelago) is to be decided only after the close of the great theater of war in Europe. Yet, no matter in what way they may be disposed of, *we should by no means let go our already implanted right without due remuneration.*"

After urging that military administration at Tsingtau should be replaced by civil government at the earliest possible moment, Baron Sakatani went on to say:—

"We must take it upon us to manage and develop Shantung Province and this by no other power than that of commerce and industry. In order to take a share in world politics it is of sheer necessity for us to make our best possible efforts for the management of Tsingtau."

It will be seen that while Baron Sakatani suggests in one breath that the future of Tsingtau is uncertain, in the next he declares that, not only Tsingtau, but the whole province of Shantung, should be "managed" and "developed" by Japan.

Let us turn now to Mr. Hajime Nedzu, another well known Japanese publicist. He is evidently in favor of an economic rather than a political conquest of Shantung. He says, *inter alia:*—

"Let us, first of all, establish banks in Tsingtau and Tsinanfu and accept the military notes only for the business of the Shantung Railway, for the purpose of extending their circulation and maintaining their market prices. The point is that when the right time is on hand, the banks can be made to retrace the notes with the silver notes, which they will issue; besides, they can engage in such a manner as to meet the special conditions of the region. Although the Yokohama Specie Bank can very well be appointed, the more suitable one is the Bank of Taiwan. This concern issues silver notes in Central and South China and has succeeded to make good use of them. As an agent of the Hypothec Bank it provides for the needs of small businessmen; and, also, it does a very successful business by issuing deposit notes for wealthy Chinamen and officials . . . When the Japanese money is thus put to use as a medium of currency, the advantage is that economic disturbances, so common in China, will largely be neutralised and averted in the afore-mentioned places. The cause of Chinese economic disturbances as proved by Gresham's Law, is the predominance of bad money over the good, because Peking has issued inconvertible notes without scruple. Then it stands to reason that together with conveniences for the Sino-Japanese trade, the introduction of Japanese currency will maintain prosperity in Tsingtau and its market districts, as demonstrated by the fact that those regions, where the foreign coin is in use, are more refractory to the panics, than those where the cheap government note is circulated."

We find here, also, the assumption that Kiaochou is to be retained by Japan and that the province of Shantung should become a Japanese sphere of influence.

Next we come to Mr. Ryuhei Shiraiwa, Managing Director of the Japan-China Steamship Company. He points out that Tsingtau is useless to Japan as a military base as she already has in her possession Port Arthur and Dairen. The economic value of the Protectorate was all that had to be considered. He proceeds:—

"As the public is well aware, being a mere desolated port in the Shantung promontory with no products in the surrounding districts, Tsingtau has nothing in itself to brag of, either historical or industrial. Germany had two objects in view in making use of the port economically. First she intended to absorb products in Shantung and its neighbouring provinces by means of railways. Secondly, she intended to operate the iron and coal mines in Shantung. As to the management of railway and mines it is undoubtedly necessary to pay attention not only to Shantung but also neighbouring provinces of North China and to open up as many resources as possible. We must expect to develop other management of Shantung not independently but by the mutual help with other provinces of China, and expect farther to show such a good result as will entitle ours to a typical management. If, on the contrary, the way of our management will give rise to a hostile feeling of Chinese against us and ultimately to difficulties and troubles to our politics and diplomacy vis-a-vis China and lay open ourselves to the suspicion of the Powers of the same sinister ambition as Germany, the result will be a cause of great anxiety for us. Thus, upon the policy of the management of Tsingtau depends not simply the future prosperity of Tsingtau but commercial and economic problems of both Japan and China. Indeed it is a question of serious importance. As it is, the Government authorities, the people at large and brave and loyal soldiers and sailors must decide upon the policy only after a calm and serious consideration."

Mr. Shiraiwa perceives, as a clear-headed business-man might be expected to do, that to antagonize the people of China would be fatal. In his opinion in order to reap tangible advantage from the occupation of Kiaochou the "management" of the Protectorate should be entirely dissociated from political ambition. But he, like most other Japanese whose views have been quoted, disregards the assurance of Count Okuma to the people of America, and bases his arguments on the assumption that Japan has succeeded to the full rights of Germany as the lessees of the Kiaochou Protectorate.

Last, but certainly not least, we come to Mr. Hikokichi Ijuin, formerly Japanese Minister to Peking. He is frankly of opinion that the war in Europe supplies Japan with her opportunity in China. "Now," he says, "that Europe has fallen into the clutches of a general war, Japan feels urged to do whatever there is within her reach for promoting her prosperity and that of China." Mr. Ijuin points out that of the foreign trade of China Japan's share is less than 20 per cent. of the total. After pointing out that the development of means of communication will largely increase China's foreign trade he appeals to his countrymen to gain a larger share for Japan, and says:—

"That our country has come across such a great opportunity is a consequence of the war, which caused the withdrawal of the European commerce from China. The opportunity is, indeed, rare and will occur only once in a great while, therefore, we must take a step forward and grasp it firmly. And let us do so quickly. If we incur a delay here the armed contest will cease and the European commercial giants will turn to China with redoubled force. Then the mighty opportunity will be lost forever."

From these expressions of opinion two or three facts emerge clearly. Financial and commercial Japan believes that Kiaochou is to remain in Japan's possession, but recognizes that if Japan is to secure the best economic advantages from the position created by the European War political ambition must be kept in the background and the friendship of the Chinese people cultivated. It is also generally assumed that the status of Shantung will for the future be analogous to that of South Manchuria, and that Japan has succeeded to whatever rights Germany possessed in the province. This, of course, is in direct contradiction to the avowed purposes for which Japan drew the sword, but the Japanese people seem to set less value upon the promises of their Premier than they expect should be accorded them by the outside world.

JAPAN SHOWS HER HAND

China and the other nations were somewhat astonished at the divergence between Japan's promise and the performance. On January 18, 1915, Japan set up a new and far from attractive diplomatic precedent and showed China plainly that she was going to follow Mr. Ijuin's advice and take full advantage of the opportunity afforded by the war in Europe, not as that gentleman suggested solely by commercial advancement, but by bullying China into the position of a vassal state.

The perpetrators of deeds of darkness naturally shrink from having them flooded by the light of day, and consequently Japan in presenting through Mr. Hioki, the Japanese Minister at Peking, a series of twenty-one demands, some of the most preposterous character, insisted that they should not be made public. If China disregarded the warning and made the demands known she was to be punished by the presentation of new and still more drastic claims, and the encouragement by Japan of the Chinese rebels in the former country. However, a secret that is shared by a number of persons cannot long remain a secret, and the general facts in regard to the demands, and the extraordinary procedure adopted in presenting them has become known to those whose business it is to discover these things. On the morning of January 18, a Note embodying the twenty-one demands was sent by Mr. Hioki, not to the Minister for Foreign Affairs which would have been quite in order, but to President Yuan Shih-Kai direct. In the afternoon Mr. Hioki had an interview with the President and explained the demands in detail.

Although, as already explained, the terms of the demands have not been officially announced, the following details are correct.

The Demands

The demands are in five groups. There is, of course, the usual preamble that sets forth that the demands are made because both Powers are desirous of maintaining the peace of Eastern Asia and of strengthening the friendly relations existing between them. No reference is made in the main preamble to the preservation of the territorial integrity and independence of China, nor to equal opportunity for all nations. A study of the demands at once explains why. Japan's clearly avowed intention was to gain a "specially favourable position" in certain selected spheres, where the door would be banged, barred and bolted in the face of the other Treaty Powers.

The first group of demands, four in number, relate entirely to Shantung. China is asked to assent:—

To Japan taking over, in due time, all the rights and privileges possessed by Germany in the Province of Shantung.

China must agree to the building of a railway by Japan from Chefoo or Lungkou to join the Shantung Railway.

She must also agree that no territory within the Province of Shantung or islands off the coast shall be leased to any third Power.

Certain places in Shantung are to be opened as Treaty Ports, such places to be jointly decided upon by Japan and China.

In regard to South Manchuria and Eastern Mongolia it was set forth that Japan had always enjoyed a specially favourable position in these regions and for this reason the following seven demands were made:—

Control and administration of the Kirin-Changchun Railway to be taken over by the Japanese Government for 99 years.

The lease of Port Arthur and the term of lease of the South Manchuria and Antung-Mukden Railways to be extended to the period of 99 years.

Japanese subjects to have the right to lease or own land in South Manchuria and Eastern Mongolia for erecting buildings for the purpose of trade and manufacture or for farming.

The Chinese Government to obtain Japan's assent before granting the subject of a third Power the right to build a railway in these regions, or to make a loan with a third Power for the purpose of building a railway in these regions. Japan's assent must also be obtained if a loan is contracted for which the security is the local taxes of Eastern Mongolia and South Manchuria.

In these regions Japanese subjects shall be free to reside and travel and to engage in business and manufacture of any kind whatever.

The Chinese Government must consult Japan first if China decides to employ advisers or instructors for political, financial and military purposes.

Japanese subjects shall be granted the right to work mines in these regions, the locality of the mining areas to be jointly decided upon by the two Governments.

The third group of demands relates to the Hanyehping Company. Japan demanded:—

That the Company should be made a joint concern of Japan and China and that China, without the previous consent of Japan should not dispose of her interest in the Company.

All other mines connected with the Hanyehping Company and mines in the neighbourhood of such mines cannot be worked by persons outside the Company without the Company's permission and the consent of the Company must be first obtained for any mining operation that directly or indirectly affects the interests of the Company.

Japan's solicitude for the territorial integrity of China, overlooked in the main preamble, is remembered in a startling manner in the fourth section of the demands, which consists solely of the following:—

The Chinese Government agrees that no island, port and harbour along the coast shall be ceded to any third Power.

In the fifth and last section the demands number seven They are:—

China shall purchase over fifty per cent. of the munitions of war she requires from Japan, or Japan shall establish a jointly worked arsenal in China, for which Japanese material must be purchased and Japanese technical experts employed.

The police in certain places in China shall be jointly administered by Japanese and Chinese, or China shall employ in such places numerous Japanese for the purpose of organizing and improving the Chinese police service.

Japanese shall be employed as advisers in political, financial and military affairs.

Japanese subjects shall have the right to propagate Buddhism in China.

Japanese shall have the right of ownership of land in the interior of China for the building of Japanese hospitals, churches and schools.

In the Province of Fukien Japan shall have the right to build railways, work mines, construct harbour works, and in case foreign capital is required Japan shall be first consulted.

Japan shall have the right to build a railway connecting Wuchang with Kiukiang and Nanchang, and a line between Nanchang and Chaochoufu and between Wuchang and Hangchow.

At a later stage we will consider the demands *seriatim*, but for the present it would be well to carry the history of the negotiations up to the time of writing. On January 19, Mr. Hioki saw Mr. Sun Pao-chi, then Minister for Foreign Affairs, and discussed the matter with him. Subsequently it was decided that conferences should be held between Mr. Lu Cheng-hsiang (who had succeeded Mr. Sun Pao-chi as Minister for Foreign Affairs) and his staff, on the one hand and Mr. Hioki and his staff on the other. The first meeting was held on Tuesday, February 2, and on that occasion the discussion was largely in regard to question of procedure. It would appear that the Japanese desired the Chinese to accept in principle all the demands at this conference, but the Chinese firmly refused. The Japanese, for very obvious reasons, wished to get things over quickly, the Chinese, for reasons equally obvious, declined to be hustled into allowing China to become a trophy to grace a Japanese election day. The Japanese wanted daily conferences, but their eloquence was expended in vain and it was eventually agreed that two should be held each week, and consequently the conference was adjourned to February 5. At this second meeting Mr. Hioki again pressed for the acceptance, in principle, of the twenty-one demands *en bloc*, but the Chinese Minister for Foreign Affairs again refused. However, he made the important concession that he would give an expression of opinion upon each of the demands, and he did so. Mr. Hioki announced, it is reported, that the Japanese Government would agree to withdraw six of the demands. Subsequently Mr. Hioki telegraphed to his Government at Tokyo the expressions of opinion given by the Chinese Minister for Foreign Affairs. A few days later he called upon Mr. Lu Cheng-hsiang and notified him that not only did the Japanese Government object to the withdrawal of any of the demands, but insisted upon the whole of them being accepted. He intimated, also, that his Government regarded with displeasure the opinions in reference to the demands expressed by Mr. Lu Cheng-hsiang at the second conference. The Chinese still held out against accepting the twenty-one demands and this point was the subject of negotiations with Tokyo. The Chinese Minister at Tokyo was instructed to see Baron Kato, the Minister for Foreign Affairs, with a view to securing a modification of Japan's attitude. Prior to this the Chinese Government had informed Mr. Hioki that they were willing to negotiate in regard to ten of the demands. This the Japanese objected to, and the Chinese thereupon agreed to discuss two more, but refused to negotiate in regard to the balance. Pending a settlement of this question, the conference fixed for February 12, was postponed, and this gave rise to the circulation of rumours that negotiations had been broken off. On February 12, although no conference was held, the Chinese submitted to the Japanese Minister at Peking in writing, their opinion in regard to the twenty-one demands, with suggestions for modification. The Chinese Minister at Tokyo on Saturday, February 13, notified his Government that his interview with Baron Kato, had resulted in a direct refusal to modify the demands on the part of Japan.

ANALYSIS OF THE DEMANDS

The demands as they were originally presented may now be considered. In passing it may be mentioned that as far as our knowledge goes no such document has ever been presented to one sovereign state by another, unless it be the Note sent by Austria-Hungary to Servia. But in that case Austria-Hungary had a clear right to seek reparation for the murder of the heir-apparent, although it is generally admitted that she went too far. In the case of Japan's demands upon China, however, the latter country was entirely guiltless of offence; there was no shadow of excuse for the presentation of punitive claims. Perhaps the most important demand was:—

The Chinese Government agrees that no island, port and harbour along the coast shall be ceded to any third Power.

This is asking the Chinese Government to agree to the establishment of a Japanese protectorate over the Republic. Were China to agree she would sink into the condition of dependency upon Japan that overtook Korea prior to the annexation. It is quite true that other Powers have demanded the non-alienation of portions of China in which they were specially interested. For example, Great Britain in 1898 asked for and obtained an assurance that China would never alienate any territory in the provinces adjoining the Yangtsze to any other Power, whether under lease, mortgage, or any other designation. A similar assurance was obtained by France in regard to the island of Hainan and territory bordering on Tongking, and a demand for a similar

guarantee in regard to Fukien made by Japan was acceded to in 1898. There is a vast difference, however, between a guarantee in regard to a region or province in which any Power has special interests and one in reference to the whole of China. Japan by making this demand is asking that the entire territory of China should be declared her sphere of influence and it will particularly be remarked that she leaves herself quite free to demand the lease or cession of any part of the Republic. This demand is a demonstration of Japan's intention to warn all the other Powers that she regards China as a closed Japanese preserve.

The four demands in regard to Shantung may now be considered. The proposal to throw open more ports to trade is not likely to meet with serious objection. If these ports are really opened to international trade it would be a good thing for China and for the Treaty Powers. But we next come to the demands:—

> China shall agree to Japan taking over, in due time, all the rights and privileges possessed by Germany in the Province of Shantung, and,
>
> China must agree to the building of a railway by Japan from Chefoo or Lungkou to join the Shantung Railway.

Japan here performs an act of cynical tergiversation. Hostilities were opened, Japan assured the world, in order to preserve the peace of the Far East, and on account of the obligations of the Anglo-Japanese Alliance. There was no whisper at that time that Japan intended to create a second South Manchuria in the historic province of Shantung. It is particularly to be noted that the Chinese inference is that the railway from Chefoo or Lungkow to Weihsien is to be built as a Japanese railway. That is equivalent to saying that the railway zone should be Japanese territory; the railway a semi-official Japanese Government concern, and that Japanese military forces should be employed to protect the line. There would be little objection to Japan demanding the right to finance the building of the line for the Chinese Government as has been done by other nations in other parts of China. But this Power that went to war to preserve peace in the Far East, and bound herself not to deprive "China or other peoples of anything which they now possess," which had no "ulterior motive," now comes forward with a demand that shows that her promises and pledges are simply "empty sound signifying nothing."

The demands in regard to South Manchuria and Eastern Mongolia are of such great importance that we repeat them *in extenso*:—

> Control and administration of the Kirin-Changchun Railway to be taken over by the Japanese Government for 99 years.
>
> The lease of Port Arthur and the term of lease of the South Manchuria and Antung-Mukden Railways to be extended to the period of 99 years.
>
> Japanese subjects to have the right to lease or own land in South Manchuria and Eastern Mongolia for erecting buildings for the purpose of trade and manufacture or for farming.
>
> The Chinese Government to obtain Japan's assent before granting the subject of a third Power the right to build a railway in these regions, or to make a loan with a third Power for the purpose of building a railway in these regions. Japan's assent must also be obtained if a loan is contracted for which the security is the local taxes of Eastern Mongolia and South Manchuria.
>
> In these regions Japanese subjects shall be free to reside and travel and to engage in business and manufacture of any kind whatever.
>
> The Chinese Government must consult Japan first if China decides to employ advisers or instructors for political, financial and military purposes.
>
> Japanese subjects shall be granted the right to work mines in these regions, the localities of the mining areas to be jointly decided upon by the two Governments.

Some of these demands were to be expected. Possibly if Japan had confined herself to the request that the lease of the Liaotung Peninsula and the term of the South Manchuria Railway should be extended she would have received moral support from quarters whence she is now regarded with undisguised aversion. The claim that the Kirin-Changchun Railway, a Chinese Government line, should be handed over to Japan for 99 years marks the zenith of Japanese audacity. There has been no war with China in the immediate past. Japan is not imposing terms of peace upon China. Her only concern, so she has assured the world, is to preserve peace in the Far East and to fulfil her engagement with Great Britain. How does robbing China of one of her railways conduce to either of these ends?

The Open Door Declarations

Japan has also apparently overlooked the Most Favoured Nation clause which appears in all the treaties with China. It reads, with unimportant variations:—

> It is hereby expressly stipulated that the . . . Government and its subjects will be allowed free and equal participation in all privileges, immunities and advantages that may have been, or may be hereafter, granted by His Majesty the Emperor of China to the Government or subjects of any other nation.

But in these demands Japan plainly shows her hand. It has to be remembered that Japan was one of the Powers that accepted the Open Door Declaration proposed in 1899 by Mr. John Hay, then American Secretary of State. The undertaking given by each nation will be the better understood if we quote the correspondence:—

> The open Door Declaration is founded upon the following letters;—Letter from Mr. Hay, American Secretary of State, to Mr. White, American Ambassador to Germany.
>
> Department of State,
> Washington, September 6, 1899.
>
> Sir,
>
> At the time when the Government of the United States was informed by that of Germany that it had leased from His Majesty the Emperor of China the port of Kiaochou and the adjacent territory in the province of Shantung, assurances were given to the Ambassador of the United States at Berlin by the Imperial German Minister for Foreign Affairs that the rights and privileges insured by treaties with China to citizens of the United States would not thereby suffer or be in anywise impaired within the area over which Germany had thus obtained control.
>
> More recently, however, the British Government recognized by a formal agreement with Germany the exclusive right of the latter country to enjoy in said leased area and the contiguous "sphere of influence or interest" certain privileges, more especially those relating to railroads and mining enterprises; but, as the exact nature and extent of the rights thus recognized have not been clearly defined, it is possible that serious conflicts of interests may at any time arise, not only between British and German subjects within said area, but that the interests of our citizens may also be jeopardized thereby.
>
> Earnestly desirous to remove any cause of irritation and to insure at the same time to the commerce of all nations in China the undoubted benefits which should accrue from a formal recognition by the various Powers claiming "sphere of interests" that they shall enjoy perfect equality of treatment for their commerce and navigation within such "spheres," the Government of the United States would be pleased to see His German Majesty's Government give formal assurances, and lend its co-operation in securing like assurances from the other interested Powers, that each within its respective sphere of whatever influence:—
>
> First.—Will in no way interfere with any treaty port or any vested interest within any so-called "sphere of interest" or leased territory it may have in China.
>
> Second.—That the Chinese treaty tariff of the time being shall apply to all merchandise landed or shipped to all such ports as are within said "sphere of interest" (unless they be "free ports"), no matter to what nationality it may belong, and that duties so leviable shall be collected by the Chinese Government.
>
> Third.—That it will levy no higher harbor dues on vessels of another nationality frequenting any port in such "sphere" than shall be levied on vessels of its own nationality, and no higher railroad charges over lines built, controlled, or operated within its "sphere" on merchandise belonging to citizens or subjects of other nationalities transported through such "sphere" than shall be levied on similar merchandise belonging to its own nationals transported over equal distances.
>
> The liberal policy pursued by His Imperial German Majesty in declaring Kiaochou a free port and in aiding the Chinese Government in the establishment there of a custom house are so clearly in line with the proposition which this Government is anxious to see recognized that it entertains the strongest hope that Germany will give its acceptance and hearty support.
>
> The recent Ukase of His Majesty the Emperor of Russia declaring the port of Ta-lien-wan open during the whole of the lease under which it is held from China to the merchant ships of all nations, coupled with categorical assurances made to this Government by His Imperial Majesty's representative at this capital at the time, and since repeated to me by the present Russian Ambassador, seem to insure the support of the Emperor to the proposed measure. Our Ambassador at the Court of St. Petersburg has in consequence been instructed to submit it to the Russian Government and to request their early consideration of it. A copy of my instruction on the subject to Mr. Tower is herewith enclosed for your confidential information.

The commercial interests of Great Britain and Japan will be so clearly served by the desired declaration of intentions, and the views of the Governments of these countries as to the desirability of the adoption of measures insuring the benefits of equality of treatment of all foreign trade throughout China are so similar to those entertained by the United States, that their acceptance of the proposition herein outlined and their co-operation in advocating their adoption by the other Powers can be confidently expected. I enclose herewith copy of the instruction which I have sent to Mr. Choate on the subject.

In view of the present favorable conditions, you are instructed to submit the above considerations to His Imperial German Majesty's Minister for Foreign Affairs, and to request his early consideration of the subject.

Copy of this instruction is sent to our Ambassadors at London and at St. Petersburg for their information.

I have, etc.

JOHN HAY.

LETTER FROM COUNT VON BULOW, HIS IMPERIAL GERMAN MAJESTY'S MINISTER FOR FOREIGN AFFAIRS, TO MR. WHITE

(TRANSLATION.)

Foreign Office,
Berlin, February 19, 1900.

Mr. Ambassador. Your Excellency informed me, in a memorandum presented on the 24th of last month, that the Government of the United States of America had received satisfactory written replies from all the Powers to which an inquiry had been addressed similar to that contained in Your Excellency's note of September 26 last, in regard to the policy of the open door in China. While referring to this, Your Excellency thereupon expressed the wish that the Imperial Government would now also give its answer in writing.

Gladly complying with this wish, I have the honour to inform Your Excellency, repeating the statements already made verbally, as follows. As recognized by the Government of the United States of America, according to Your Excellency's note referred to above, the Imperial Government has, from the beginning, not only asserted, but also practically carried out to the fullest extent, in its Chinese possessions absolute equality of treatment of all nations with regard to trade, navigation, and commerce. The Imperial Government entertains no thought of departing in the future from this principle, which at once excludes any prejudicial or disadvantageous commercial treatment of the citizens of the United States of America, so long as it is not forced to do so, on account of considerations of reciprocity, by a divergence from it by other governments. If, therefore, the other Powers interested in the industrial development of the Chinese Empire are willing to recognize the same principles, this can only be desired by the Imperial Government, which in this case upon being requested will gladly be ready to participate with the United States of America and the other Powers in an agreement made upon these lines, by which the same rights are reciprocally secured.

I avail myself, etc.

BULOW.

But this was not the only occasion that Japan pledged herself to the principle of equal opportunity in China. In the agreement relating to China signed by Russia and Japan in 1907, Article 2nd reads:—

The two High Contracting Parties agree to recognise the independence and the territorial integrity of the Chinese Empire, and the principle of equal opportunity for the commerce and industry of all nations in the said Empire, and they engage to uphold and defend the maintenance of the "status quo" and the respect of that principle by all the peaceful means possible to them.

That engagement was sufficiently explicit. When we turn to the Anglo-Japanese Alliance signed in London on July 13, 1911, we find that the preamble and first article read thus:—

The Governments of Great Britain and Japan, in view of the great change that has taken place in the political situation since the present Anglo-Japanese Agreement was concluded on August 12, 1905, and believing it to be conducive to the general peace and security to amend the said Agreement and adapting it to the changed conditions, have agreed upon the following stipulations in the place of the said Agreement, which have the same objects as the present Agreement, that is to say:—

A.—The consolidation and maintenance of the general peace in the regions of Eastern Asia and of India;

B.—The preservation of the common interests of all Powers in China by ensuring the independence and integrity of the Chinese Empire and the principle of equal opportunities for the commerce and industry of all nations in China;

C.—The maintenance of the territorial rights of the High Contracting Parties in the regions of Eastern Asia and of India, and the defence of their special interests in the said regions:—

Article 1.—It is agreed that whenever, in the opinion of either Great Britain or Japan, any of the rights and interests referred to in the preamble of this Agreement are in jeopardy, the two Governments will communicate with one another fully and frankly, and will consider in common the measures which should be taken to safeguard those menaced rights or interests.

Again in the Agreement between Japan and the United States signed on November 30, 1908, the following is one of the clauses:—

The policy of both Governments, uninfluenced by any aggressive tendencies, is directed to the maintenance of the existing "status quo" in the region above-mentioned (the Pacific Ocean) and to the defence of the principle of equal opportunity for commerce and industry in China.

This is reaffirmed in another clause:—

They are also determined to preserve the common interests of the Powers in China, by supporting by all pacific means at their disposal the independence and integrity of China and the principle of equal opportunity for commerce and industry of all nations in that Empire.

Japan has unequivocally accepted the principle of equal opportunity in China. She has given at least four solemn engagements to respect that principle. Yet what do we find? We find that she is now engaged in endeavouring to bully China into giving her "spheres of influence," where the Open Door is not to obtain, in South Manchuria, in Eastern Mongolia, in Shantung and in Fukien. Her pledges, her promises, are by her own showing worthless "scraps of paper" to be torn to shreds and scattered to the wind.

In regard to Fukien Japan demanded:—

In the Province of Fukien Japan shall have the right to build railways, work mines, construct harbour works and in case foreign capital is required Japan shall be first consulted.

This is an endeavour to translate Japan's nebulous claim to Fukien as a "sphere of influence" into definite terms. It is another negation of her undertaking in regard to the Open Door. In view of certain negotiations which took place last year this demand is directly aimed against America.

Japan's ally, Great Britain, will probably take especial interest in the demands in reference to the Yangtsze region. Let us repeat them:—

The Hanyehping Company shall be made a joint concern of Japan and China, and China, without the previous consent of Japan shall not dispose of her interest in the Company.

All other mines connected with the Hanyehping Company and mines in the neighbourhood of such mines cannot be worked by persons outside the Company without the Company's permission and the consent of the Company must be first obtained for any mining operation that directly or indirectly affecting the interests of the Company.

China agrees to Japan's right to build a railway connecting Wuchang with Kiukiang and Nanchang. Also a line between Nanchang and Hangchow and a line between Nanchang and Chaochoufu.

Great Britain has always been presumed to possess special interests in the Yangtsze Valley. It was British capital and British enterprise that opened this great region to the trade of the world. So well was it understood that Great Britain possessed special rights in the Yangtsze Valley that in the Scott-Mouravioff Agreement of April 28, 1899, concluded at a time when relations between Great Britain and Russia were far from cordial, the latter country engaged:—

"not to seek for her own account, or on behalf of Russian subjects or of others, any railway concessions in the basin of the Yangtsze.

This was an acknowledgment by a country then on no particular terms of amity with Great Britain of her privileged position in this region. Yet, now Great Britain's ally, Japan, demands from China rights which, if granted, would prevent the employment of British capital in one most important industry and would inflict an irreparable blow upon British trade. It is believed that Japan demands that the railways she seeks to construct should be Japanese railways and not Chinese Government lines. The audacity of this demand, the cynical disregard for the rights of China and of Great Britain, show the lengths to which Japan's inordinate ambition will carry her. When the facts are thoroughly understood in Great Britain it may be anticipated that there will be an outburst of indignation that will cause even the War Party in Japan to think.

The methods of the feudal robber baron, who from his mountain fastness was wont to swoop on the peaceful peasantry

on the plains below and supply his necessities by pillage and plunder, are obsolete to-day. The methods of mediævalism are an anachronism in the twentieth century. A Nation that callously affronts friend and foe is inviting disaster and the invitation is not likely long to be unaccepted.

Conscious of ill-doing, aware perhaps that this time her chauvinistic spirit has carried her too far, Japan has been attempting to delude the world. Encouraged by former success in hoodwinking the Press of America and Great Britain she has essayed once more by the devious methods practised in the past to sway the world's opinion in her favour. The Japanese Embassy in London, speaking through *The Times*, ridiculed the statement that Japan had presented oppressive demands and threw all the blame upon China.

It was declared that only eleven demands, and not twenty-one had been presented. This perversion of the truth was also communicated to the Foreign Offices of the Powers interested in China with which Japan had diplomatic relations. This communication to the Powers omitted some of the most important demands and conveyed a wrong impression in regard to others. Japan stated that her demands consisted of the following:—

I.—In relation to the Province of Shantung.

1.—Engagement on the part of China to consent to all matters that may be agreed upon between Japan and Germany with regard to the disposition of all rights, interests and concessions, which in virtue of Treaties or otherwise Germany possesses in relation to the Province of Shantung.

2.—Engagement not to alienate or lease upon any pretext the Province of Shantung or any portion thereof and any island lying near the coast of the said Province.

3.—Grant to Japan the right of construction of a railway connecting Chefoo or Lungkow and the Tsinan-Kiaochou railway.

4.—Addition of open marts in the Province of Shantung.

II.—In relation to South Manchuria and Eastern Inner Mongolia.

1.—Extension of the terms of the lease of Kwantung, the South Manchuria Railway, and the Antung-Mukden Railway.

2.—(A). Acquisition by the Japanese of the right of residence and ownership of land.

(B). Grant to Japan of the mining rights of mines specified by Japan.

3.—Obligation on the part of China to obtain in advance the consent of Japan if she grants railway concessions to any third Power, or procures the supply of capital from any Power for railway construction or a loan from any other Power on the security of any duties or taxes.

4.—Obligation on the part of China to consult Japan before employing advisers or tutors regarding political, financial or military matters.

5.—Transfer of the management and control of the Kirin-Changchun Railway to Japan.

III.—Agreement in principle that, at an opportune moment in the future, the Hanyehping Company should be placed under Japanese and Chinese Co-operation.

IV. Engagement in accordance with the principle of the maintenance of the territorial integrity of China, not to alienate or lease any ports and bays on, or any island near, the coast of China.

It will be particularly remarked that Japan did not disclose the fact that she asked China to agree not to alienate or lease any ports or islands *to any third Power*, clearly reserving to herself the right to demand such alienation if she thought good. Neither did Japan disclose the fact that in regard to the Hanyehping Company she asked China to agree to prevent Great Britain or any other country carrying on mining operations in the Yangtsze Valley. The inspired communications to the Press and to the Treaty Powers made no reference to the demands in regard to Japanese political, financial and military advisers; to the demand for the right of ownership of land in the interior of China; to the demand for Japanese administration of the Chinese police in certain localities; to the demand that Japan should supply over fifty per cent of the munitions of war required by China, or should establish an arsenal in China; to the demand for railways in the Yangtsze (which would have been particularly interesting to Great Britain in view of Russia's acknowledgment of Great Britain's exclusive right to conduct railways in this region); nor to the closing of the Door in Fukien. Japan fondly imagined that she could nobble the Press of the world and frighten China into silence. She has made a great mistake.

Japan has denied that she has put forward demands that subvert the sovereignty of China or vitiate in any way the treaty rights of other nations. The onus of proof is upon Japan. It would be a simple thing for her, with the concurrence of China, to publish her original demands and set herself right with the world. Dare she do so? She knows thoroughly well that she dare not; that her attitude has been the negation of all that is decent in diplomacy, an exhibition of a national lack of morality that one might expect to find among the Bushmen of South Africa, but not among a people who boast of their devotion to Bushido—the creed of the chivalrous.

Japan is standing at the Bar of the Court of the Nations, brought there, not by the International Policeman, but by her own actions. What will she plead? But lately admitted to the circle of nations whose voice determines the destiny of the world, she assumed not only the rights, but the responsibilities, of that exalted position. How has she discharged those responsibilities? In what way has she added to the advancement of international peace and prosperity? Has she been true to her friends, courteous to the weak, courageous to the strong? In the depths of her conscience can she say that she has acted in the splendid spirit of the Samurai of which we wrote lately when we refused to believe the charges of bad faith brought against her? In what way has she justified those who believed in her and gave expression to that belief?

Metaphorically speaking, Japan has her feet upon the brink of a precipice. Below her surges the Sea of International Execration. Will she pause and retrace her steps while there is still time, or will she blindly step forward and disappear, never to emerge except as a pariah among the Powers? The choice is hers to-day, and upon that choice depends her future weal or woe.

JAPAN AT TSINGTAU AND AMERICAN POLICY

BY LEWIS EINSTEIN, FORMERLY FIRST SECRETARY OF THE AMERICAN LEGATION AT PEKING.

(*From the January Journal of the American Asiatic Association*).

If the Great War is likely to affect the future of the United States, in more ways than is commonly realized, the Japanese siege of Tsingtau has perhaps been the first event to awaken our appreciation of the different points of contact with its political aspects. The excitement provoked by its news has fortunately subsided before statements from Washington that in view of assurances received, there existed no cause for apprehension. It can hardly be doubted, however, that greater misgivings are entertained as to the future, than could officially be admitted. Whether these are justified or not will depend largely on the policy we shall pursue.

German indignation at the siege is readily comprehensible. Berlin had been reconciled to the temporary loss in case of war of all her other colonies. Firm confidence prevailing as to the outcome, it was felt that the peace negotiations would restore these with interest. But at Kiau-Chau the situation was different. It had been a pet of recent years, upon which forty million dollars are said to have been lavished. No less was hoped from it as a center of infiltration than as a colony. To Germany, perhaps, more than for any other country, the future of China was indifferent. While ready to commit herself to the "Open Door" in order to associate her diplomacy with ours, her predilections, unlike our own, were by no means exclusively in that direction. With characteristic realism she was prepared to benefit either by that or else by a reversion to the "Spheres of influence," almost without preference as to which prevailed. The important thing was not the policy but the benefit. If China attempted reconstruction, Germany was ready at all times to lend her assistance toward a military reorganization. Economic advantages and Krupp contracts were always certain to follow, while the hope could even be entertained of finding in a strong China, a new and greater Turkey able to act as a partial counterpoise to Russia, and perhaps eventually to menace even India.

Should, however, the long threatened break-up of China become imminent. Tsingtau, instead of a wharf became the kernel for a future German colonial empire which might extend beyond Shantung to embrace Honan and Shensi. The exceptional favor shown to this tiny colony of barely two hundred square miles, all points to the double intention of utilizing it intensively, whatever occurred.

The German plans had taken into account a defense against all the world except Japan. The strength of fortifications around Tsingtau coupled with the naval forces in permanence there, rendered a successful siege practically impossible for any other nation to undertake. To its considerable garrison could be added thousands of German reservists scattered throughout the Far East and ordered to report there in case of war. Russia might possibly have attempted such capture aided by the British Far Eastern Squadron. But Germany knew that Russia would not do so because of her diplomatic arrangements with Japan. Having been driven out of Port Arthur, it was not to be supposed that she would be allowed to obtain a new foothold opposite Korea. Anger against England for having supposedly incited Japan was the more violent because of the latter being the only country except ourselves to which Germany could not expect to dictate terms, even though victorious in Europe. To recover Tsingtau another war would be necessary which became impossible without a base in the Far East for naval operations. Hence the indignation at what is realized as a permanent loss and probable death blow to German political ambitions in China.

REGRET MAY BE INOPPORTUNE

Viewed in this light it may be that our regret at seeing Japanese mastery exchanged for German is inopportune. We have, perhaps, allowed ourselves to be unduly impressed in the past, at the assistance occasionally rendered by German diplomacy in the Orient, without appreciating the companionship its isolation sought, or the purely opportunist nature of its objectives. It was wise to avail ourselves of it but wiser still if we kept eyes as well as door open in China. Certainly, the disappearance of German rule is, even for us, no unmixed evil. The elimination of a political foothold in a colony containing the necessary base for vast political ambitions, should rather prove welcome, in checking a permanent temptation and forcing Germany to henceforth support in all sincerity and without ulterior purpose the "Open Door" policy and the integrity of China.

The substitution of Japan is less desirable though by no means unexpected. Assurances have apparently been given by Tokio of the intention to restore the territory to China, but it is doubtful if this will comprise more than the vague acknowledgment of sovereignty. Our objection lies in change of masters, and seeing a nation already powerful on the Asiatic mainland increasing its prestige and its holdings. Unless British participation in the siege has been sufficient to exercise a countervailing restraint it is not probable, after the sacrifice of life and treasure which the capture of Tsingtau must entail, that the territory will be restored to China. Japanese diplomacy is a past master in the art of amphibious arrangements characteristic of the East. If it is to be judged by its previous record in the Liao-tung peninsula, unless it should demand elsewhere equivalent compensation it will be more inclined to take over the long lease on which German tenure reposed. Reiterating previous assurances regarding the "Open Door" and reaffirming respect for the integrity of China, it probably will take calm possession of its conquest and proceed to develop the careful German beginning in the same systematic way as in Korea and Southern Manchuria. The problem to realize is the extent to which this occupation affects us and what course of action commends itself in consequence.

Our interest in China rests on various foundations. In addition to the desire for trade which already a century ago attracted the Boston clippers to Canton, a strong American moral influence exercised through educational, philanthropic and religious institutions has acted as a sentimental tie. We felt our ability to perform civilizing service and a wise record of a territorial disinterestedness proved the most convincing argument for our sincerity in dealing with a proud people. It has repeatedly been noticed that the only foreign stamp which left permanent impress on Chinese educated abroad was ours. Such confidence and respect has been for us and should remain a national asset.

China, moreover, has been the earliest point of departure for our diplomacy from its previous exclusive attention to the Monroe Doctrine. For the second time an American impress was given to a former British suggestion, and in advocating the "open door" John Hay achieved our first important diplomatic victory outside the Western Hemisphere. It is only natural that the various sentimental and traditional interests possessed in the Far East should confirm the wish to preserve a policy comporting no selfish advantage, and as much in the interests of China as to the world at large. But no policy can be judged exclusively on its merits, or without regard to the risks it comports. However great our sympathy or our readiness to assist China, it is apparent that American public opinion would rightly never countenance a war undertaken for the sole purpose of defending Chinese integrity or the "open door" against attack. Our diplomacy must necessarily stop short at the point beyond which it requires armed support.

UNDERRATED POWERS' INFLUENCE

The commonplace nature of this remark becomes less obvious when confronted with the extraordinary measures which not very long ago had characterized our Far Eastern policy. The successive steps taken in attempting to neutralize Manchurian railways had as their chief result to cast suspicion on our motives, and reconcile two adversaries who preferred to divide their spoils rather than abandon them in their opinion for our benefit. In the cognate venture of the so-called Chinchow-Aigun railroad which was to run parallel to the Russo-Japanese road, although we associated a British private enterprise with our own, and unselfishly allotted to it the task of construction, while we preserved the less desirable financial arrangement, the brunt of the diplomatic battle and defeat fell upon us. Our error in attempting both came from underrating the influence of other powers, and overemphasizing the special importance of Manchuria by believing that if it could be saved, China would at once be put on her feet. In reality the canker lay far deeper. The introduction of American interests into the three Manchurian provinces could have had but slight effect in assisting the then Middle Kingdom, but might have proved far more dangerous to us than at the time was realized. Fortunately our ill success proved our salvation. We only deceived ourselves through magnifying the utility of a railway to arrest Chinese decay, and gave unnecessary offence at both Petersburg and Tokio.

Had the problem been presented in a somewhat different light, it is probable that we might have been spared rebuffs and accomplished something more durable for the purpose in view. The question was not how we were going to save China against Russian and Japanese aggression, but if China would be able to save herself from her own disintegration and in what manner could we best assist her without incurring undue risk. Moreover, if all our efforts should prove partially or wholly ineffectual how could we secure the necessary freedom for American trade and the continuation of American influence in legitimate fields of development.

If this is a fair approximation, steps of a different kind had to be pursued, which involved perhaps a certain amount of necessary disillusionment. There can be no doubt that among the reasons for American popularity in China at the time of our activity in Manchuria, had been a widely diffused idea prevailing among the young Chinese nationalists, though its source was hard to detect, that we were ready to assist them with our armed strength against Japan. The absurd notion of a Sino-American alliance was even mooted, and not only on the Eastern Shore of the Pacific. It was distinctly unfortunate for hopes of this kind to be aroused though through no fault of the State Department. While apparent temporary advantages may have been the immediate consequence, the keen disappointment certain to follow the discovery that our loudly announced friendly intentions stopped short at the brink of danger, was not conducive to increasing Chinese confidence in the United States. So far as even unconsciously our action lent itself to such construction it was neither adroit nor honest.

After the eccentricities of these efforts in Manchuria it was necessary to re-establish confidence, and a fortunate radical change soon came over our policy. We began to realize that the problem was less one between helpless China and ourselves, than between ourselves and the other powers. Wisely, we set about to remedy previous errors, by arriving at a frank understanding with the nations of Europe and Japan. The new agreements were based upon the principle of co-operation over railway enterprises and a currency loan. Association thus took place in a practical way with powers whose intentions were in certain cases less altruistic than our own but whose possible unfriendliness could be moderated by our influence and deviated by the prospect of financial advantage. Without risk of any kind we were able in this manner to render real service to China by standing on a footing of equality, and avoiding all semblance of grasping predominance through the pursuit of exclusive advantages. Judged by the tests of diplomacy, this new policy was eminently sound and could it have been persevered in, should have accomplished the purpose desired.

BANKERS WELCOMED WITHDRAWAL

From a domestic point of view, however, a grave initial mistake had been made by unduly restricting the basis of our financial force, instead of making it representative of the country at large. This error had originated at the time of taking up the proposed enterprises in Manchuria and had unfortunately remained uncorrected when our policy changed and broadened. A semblance of justification was thereby given to attacks made against "dollar diplomacy" and the supposed unholy alliance between the State Department and Wall Street. While the motives of both were above suspicion, yet the country, ill informed as to the situation, and with insufficient attention paid to its legitimate demands for information, turned these into violent criticism. The bankers, who had hitherto realized no advantages, were only too anxious at a time of financial stringency and darkened horizon to terminate an enterprise which had been the source of much annoyance without hope of commensurate benefit. Having undertaken the work largely as the result of an appeal made to their patriotism, they found their motives misconstrued and sinister intentions most unjustly lent them. Their desire coincided with that of Mr. Wilson who, newly inaugurated, was eager to avoid all semblance of intimacy with the financial forces of New York. Almost the first act of his administration was without further consideration, to put an end to the association with the bankers, and as a direct result of this, with the somewhat astonished foreign powers in co-operation with whom we had been working. The aspects of the question so far as they affected our broader interests in China or the future of American policy, were all waived without more ado. Mr. Wilson thus played unconsciously into the hands of a Wall Street which concealed its gratitude for rescuing it from an unprofitable contract, but whose dupe he has been in this perhaps more than he has ever suspected. In defence of his position Mr. Wilson came out with a statement expressing fear lest the continuation of our previous policy might imply touching near to the administrative independence of China. It is not unlikely that greater familiarity with the question than the time at his disposal permitted, would have convinced him that the administrative independence of China had so long been endangered and possessed so little inherent vitality that the possibility of any collective control, far from increasing the peril, lessened it; and that we neither benefited China by withdrawing her only disinterested friend, nor ourselves in the future economic development of the Far East.

Once more we reverted to our ancient haphazard position of uncertainty veneered by a certain ostentation of proferred services toward

China, to bring our diplomacy at least superficially into line with present day fashion. But the value of such services in excess of what had previously been accomplished, has as yet not transpired, while our own benefits have failed to impress themselves on the layman. Without the strain of a European crisis the disadvantages of our position would probably have become far more noticeable. As it is, we find ourselves perplexed in our diplomatic isolation at a time when Japan is about to occupy Tsingtau. Not wishing to make too active remonstrances which might cause us to drift toward an impossible alliance with Germany, we are obliged to accept at their face value such assurances as Japan has seen fit to give. Few things so certain, as that for the present we cannot do otherwise. The future of Tsingtau will, however, largely depend on our policy at this time. For the present, Chinese recovery of ceded rights need not to be considered, as provisionally at least, remaining outside the realm of practical politics. The actual question must regard Tsingtau not as an isolated instance, but as part of a situation embracing the full extent of our relations with Japan, and which involves a frank recognition of the existing position.

SHOULD DEMAND ONLY FAIR PLAY

The questionable expediency of badgering Japan because of her action in Manchuria has already been noticed. Restraints of trade by her agents there, have more often been alleged than proved. Certainly her underselling us in the piece goods business which was long a favorite grievance had rather been due to greater economy of distribution and sale, than to surreptitious causes. Our frequent complaints were not always justified and contributed not a little to the unfortunate atmosphere of irritability which has arisen. On our own side of the Pacific we are compelled by urgent reasons in many cases above our control, to adopt certain measures which even if warranted cannot avoid giving legitimate offense to a proud nation. But while aiming to restrict such unpleasantness within as narrow limits as we can, and wherever possible to remove the sting of specific legislation by wise exceptions, it is the height of folly for us in isolation to seek gratuitous grievances in what after all are regions of secondary importance. Could we only realize it, we would see that our main interest lies rather in the conditions of Japanese stewardship of her Chinese possessions, and in demanding that such territorial encroachments should be administered according to recognized principles of equity and fair play. In a nutshell, we cannot prevent the decay of China, least of all with the means we are willing to employ. What can be done is to demand that such territorial encroachments as are unavoidable should respect the ultimate hope of reversion to China, and the rights of neutrals.

It is plain that such request on the part of our diplomacy would have far more chance of success if it were presented by us not as an isolated power, but as a member of a group of nations with more or less common interests. If the assurances which Japan has voluntarily given regarding her future attitude at Tsingtau should cease to be as satisfactory in the future as they are now declared, she would be more inclined to resent demands for explanation or remonstrances coming from us singly than if we acted in unison with other nations. More than this, Japan forming part of a concert of which we also were a member, would be likely to refrain from acts of a nature giving umbrage, or lending themselves to justifiable criticism.

In spite of the present war, the principle of concerted action in diplomacy is no passing phase nor will any millennium restore the splendors of isolation. In a survey of the future, unless we are willing to subscribe to the lessening of means of communication, it is apparent that nations will become more, rather than less connected, and as such will often find it advantageous to pursue identical lines of policy, especially in Oriental countries. The marked reluctance to enter into any concerted action involving the slightest responsibility has been among the most pronounced fallacies of much American diplomacy in the past. While endeavoring thereby to secure a moral sanction for our interpretation of the Monroe Doctrine, it failed utterly to accomplish this, and imposed on our policy a rigidity and absence of suppleness which deprived it in great measure of utility as a free instrument in sustaining oversea interests. In the Far East especially, as already noticed, we have, at times, maneuvered, because of this isolation, into positions involving considerable risk without substantial cause or hope of commensurate benefit. It is inconceivable that this could have occurred had our pace conformed itself to that of nations whose broad interests in China are not unlike our own though their policy is pliable enough to conform to the shaping of events. Paradoxically we have abandoned our former position of absolute security through a division of risks and benefits, to exchange it for an inferior one presenting far greater danger. The reason has been the present administration's unwillingness to continue its predecessor's tradition. Instead of sustaining such policy on a temporary scaffolding if necessary, and reconstructing it along the lines desired, it swept away good and bad and destroyed in a moment the patient labor of years.

The war would, in any case, have for the time arrested the financial action of the concert in China. But though Germany must have provisionally withdrawn from it, there is no reason why we should have done so, or why we should not have been of real assistance to the numerous German interests desiring the preservation of the "Open Door." Such a position would in no way have been incompatible with the obligations of our neutrality. If we were acting to-day as the associates of Great Britain, France, Russia and Japan in the Far East, for the defence of certain policies subscribed to by all the powers, we would find ourselves in far better position to secure from the outset Japanese subscription to pledges which would make her tenure of Tsingtau less objectionable, and might thus even render distinct services to Germany. If, for instance, Japan were willing to demolish the existing fortresses and not to erect others, to maintain the place as an open port without special advantage to her trade, to preserve the Customs control for the Chinese Maritime Customs, to internationalize railways and wharfs in the leased territory, the tenure would be less offensive than if it aimed at exclusive advantages. All, or the greater part of this could probably be effected if approached in time by friendly diplomatic negotiation and by making use of the good offices of Great Britain and Russia, powers which like ourselves have no wish to see a militant extension of Japanese influence on the mainland.

In considering the permanent aspects of our Far Eastern policy we must definitely admit that Japan has there, great and legitimate interests exceeding our own. Where we possess other fields for expansion she finds herself with a rapidly increasing population practically restricted for its outlet to the Asiatic mainland. If we place ourselves in a permanent attitude of blocking her oversea development, we envenom a situation already difficult and run the risk of bringing about a conflict from which the main benefits we shall derive, will have been the consciousness of the faultiness of our diplomacy and absence of our military preparation. Would it not be wiser to appreciate the necessary limitations of our action in China both in respect to the aid we may extend and the range of our interests. Such examination if sincerely made, must lead to the conviction that single handed we cannot save China nor, even were it feasible to maintain such predominance, would we be willing to incur the tremendous responsibilities of an action which must carry with it the hostility of every civilized power possessing interests there. No sane statesmanship could seek the doubtful pre-eminence of this nature.

Along more modest lines we possess ample scope for a moral and economic penetration which will not lead us to a precipice although permitting us to render real services to the Chinese. By aiming at equality but not superiority of rights and efforts, we revert to the farsighted policy of John Hay and eschew the extreme directions of a subsequent action which, save for a brief period, alternated between being overhazardous or unduly negative. In collaboration with other powers who in the past have subscribed to the "open door" principle, we expect them wherever their special interests may appear to clash with this, to maintain a certain standard of administration which will bear in mind the broad interests of all. Friendly moderation and counsel would thus aim to achieve what peremptory demand might fail to obtain. And in so doing by mitigating attempts at violence, by smoothing surfaces of friction and points of asperity, we would once more justify the confidence which other nations had previously entertained in the wisdom and disinterestedness of our Chinese policy. The fact that we ought to co-operate with foreign powers, far from signifying that we abandoned China, meant only that we preferred a conciliatory and diplomatic way of carrying out our policy, which would permit us to assume again in the future as in the past, the position of mediator between China and foreign powers. Our action whatever it be, is in reality of far less importance than the fact that it should not be dissociated from that of other nations. In spite of the delicacy of this role it is one which if properly understood should be productive of general benefit, and in its judicious application lies the surest hope for the salvation of China and its peaceful evolution toward order and progress. The more enlightened Chinese would soon realize that without asking the impossible, they were at all times certain to find in our diplomacy a moderating influence and a true friend.

It remains to be seen if Mr. Wilson will be farsighted enough to construct afresh what he had first demolished and rebuild the ruins of our former entry into the concert of nations which he so light-heartedly destroyed. This might be the easier for him to accomplish, as for the present, at least, there could be little question of any important financial action with its dreaded ramifications. The necessary steps before us now are almost purely diplomatic. Only by our willingness to seek the close co-operation of other powers in China, and especially of Japan, can her occupation of Tsingtau be indifferent to us.

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THE BANK OF CHINA

At this period when the Government of China is demonstrating a desire to reorganize its intricate financial affairs it is interesting to note that the Bank of China, a national Bank conducted on modern lines, is also undertaking reforms which are rapidly making for greater stability and prosperity. While the conduct of banking business according to Occidental methods by Chinese is practically in its infancy, the Bank of China and the Bank of Communications are institutions which have now become well-established and promise to be prosperous. The Bank of China, being the national bank, ranks first among foreign-style financial organizations in Chinese control, and while its past, owing to the excessive financial disturbance in the Republic, has not been strikingly progressive it is now being controlled by a Governor (Mr. F. M. Sah) and a Council which have successfully introduced methods calculated to give the institution a foremost place among the banks operating in China.

When the Bank of China was reorganized in 1913 the deposits amounted to $17,000,000. By the end of the following year they had advanced to $57,000,000, an increase of $40,000,000. The cash reserve against notes was, in 1913, $5,000,000, while in 1914 it reached $20,000,000. Cash on hand, exclusive of the note reserve, amounted to $3,500,000 in 1913, while in 1914 it advanced to $15,500,000. The net profit in 1913 was $280,000, while in 1914 it reached $1,400,000. The business turnover is stated to have been well over two milliards of dollars in 1914, the number of branches operating in various parts of the country at the end of that year being over 70, and the employees about 1,000. Towards the end of the Chinese old year, in February, the branch offices of the Bank of China in Peking, Tientsin, Shanghai, etc., received fresh deposits of over $7,000,000, and the Bank's note issue increased by nearly another $2,000,000.

The Bank of China is destined to play an important part in the reorganization of the revenues of the country in the future. Already it is the bank of deposit in the interior for large collections of Salt Tax revenue, and it will also handle much of the revenue collected as Land Tax. In currency reform, too, it will figure prominently, as it already has done in connection with the efforts of the Government to ameliorate the distress caused by the over-issue of provincial bank notes and their consequent depreciation.

There is no reason why this and other banks should not progress. The Chinese have a singular aptitude for banking business, and with men such as the present Governor of the Bank of China in a position honestly to employ the talent available it would be surprising if the standard did not rise. President Yuan Shih-kai, too, is closely interested in the firm establishment of this national organization. To him, perhaps, is due the inauguration of the first national bank in China. When Viceroy of Chihli, His Excellency at the close of 1902, memorialized the Throne to establish a national bank at Tientsin, and his memorial being favorably received such a bank was later established, the first manager being Taotai Man Ching-fan. The bank participated largely in removing the financial disturbance in northern markets at the period, but for lack of a manager versed in modern methods of business the bank did not attain the standard aimed at by the then Viceroy.

Apropos this subject it is interesting to recall that bank forms were invented by the Chinese, Venetian merchants learning of them from the Chinese and transferring the knowledge to French, English and German merchants. The Chinese were also the first to use paper as money, and the adoption of this practice led to the establishment of banking in China. Peculiarly enough the chief banking was done in the old days by Shansi natives, and even to-day they rank as the foremost native bankers in the country. But they were transmission banks (hwei tui chwang) and not deposit banks, their fortunes being derived from salt and iron, both of which products, Dr. Edkins points out in his "Banking and Prices in China," have been exported from Shansi in unfailing abundance for more than two thousand years.

The adoption of modern methods of banking by Chinese is practically a recent development, their lessons being mostly derived from the success of the foreign banks operating in the Treaty Ports of China and at Hongkong. Many attempts to

establish banks have failed owing to possession of but rudimentary knowledge by those who launched the enterprises, but with the passage of years Government and private students have entered large foreign banks for thorough training, and many of them are now equipped to assist in the establishment of up-to-date institutions. The management of the Bank of China now sets out to demonstrate that it can be of national service and at the same time be useful as a model for others who have trodden the hard road of modern finance and stumbled. All those who take a sympathetic interest in the development of China will hope that this national institution will not only from a purely banking point of view fulfil the expectations of those who founded it, but will also prove of value to the country in the adjustment of the difficult financial and currency problems with which it is confronted.

CHINESE RAILWAYS AND THE WAR.

The European war is having a noticeable effect upon the revenue of railways in China. It is difficult to believe at first thought that such could be the case, yet it may be realised when it is remembered that railways in China derive most of their freight from cargo destined for export or from imports. While there is a large passenger traffic, and a large freight traffic in ordinary times, the bulk of the latter flows from the country to the coast. There is not a great deal of inter-station cargo traffic, though that is gradually developing. When the war broke out and over-sea traffic was interrupted products from the interior were held up for lack of markets, and there has been an aggravation of affairs owing to a lack of steamers. Silk, tea, and cereals constitute the chief exports, though there is a growing trade done in merchandise of various kinds. A large quantity of this trade is carried on railways, and the war has created a condition in which the producer finds it impossible to use as he might the means of transportation provided for him. The slump in imports owing to the war is also strikingly indicated by the Maritime Customs returns. At the end of 1914 the revenue received by that organization for the year was some Taels 5,000,000 lower than the record in 1913. This decline is likely to be increased this year owing to disturbance of markets, though the oceans are now less risky to travel over, so far as raiding German cruisers are concerned, than they were some months back.

We give below the returns from the various railways for the latter half of 1914. While the surplus totals $4,609,315.85, it is some $2,000,000 less than during the latter half of 1913. In the returns of the Peking-Mukden line a slump is also noticeable—there being about $1,200,000 less than the net surplus for the same period of 1913. In some measure this is due, however, to an increase in the expenditure, that of 1913 being about $3,000,000 while that for the latter half of 1914 was $4,312,002.

The following are the rough figures for the period beginning July 1 and ending December 31, 1914.

Name of Railway	Revenue	Expenses
Peking-Mukden	$6,810,762.09	4,312,002.20
Peking-Hankow	8,496,926.38	4,384,569.77
Tientsin-Pukow	2,750,000.00	4,434,701.89
Chengtingfu-Taiyuanfu	882,124.19	928,438.00
Taokou-Chinghua	289,000.00	411,000.00
Shanghai-Nanking	1,542,150.00	1,890,536.83
Canton-Kowloon	385,000.00	863,259.49
Kirin-Changchun	351,800.00	353,700.00
Chuchow-Pinghsiang	211,400.00	216,100.00
Peking-Kalgan	1,345,262.00	584,382.00
Kalgan-Suiyuan Ext.	251,474.00	151,589.00
Kaifeng-Honan	520,000.00	817,928.00
Canton-Samshui	378,039.11	224,404.74
Changchow-Amoy	17.290.00	49,300.00
Total	$24,231,227.77	$19,621,911.92

THE FINANCES OF CHINA

Pessimists to the contrary notwithstanding, China's financial record for 1914 was excellent and her prospects for the present year are most encouraging. In some quarters it was thought that the inability to raise loans in foreign money markets owing to the war would so embarrass China that she would be unable to meet her foreign financial obligations. So far was this from being the case that she not only met all her foreign obligations due in 1914 promptly from her own resources, but has begun the year 1915 by setting aside ample funds to meet the requirements of internal loans.

From a document issued by the Department of Revenue on February 15 it is learnt that for the first seven months of 1914 the revenue from both the ordinary and the new taxes showed an encouraging increase over the receipts for a similar period in the years 1913 and 1912. During the latter five months, however, there was a great diminution both in imports and exports and consequently the Customs revenue was considerably decreased. If the promise of the earlier months had been fulfilled the Customs revenue would have shown a substantial and satisfactory increase over that obtained in 1913, but owing to the war and the consequent paralysis of trade, the end of the year witnessed a decrease of $5,400,000 in the Customs revenue as compared with 1913. Another fact that was singularly unfortunate for China was the extraordinary high rate of exchange. China's foreign indebtedness has to be paid in gold and consequently she was compelled to pay at least a fifth more as a result of exchange being against her. Notwithstanding all this China was not only able to pay off all her foreign interest obligations but to keep in hand sufficient to meet interest charges falling due in January, 1915. The following table prepared by the Department of Revenue, shows how the foreign obligations were met:—

Loan Obligations. Receipts.—From sums allotted to meet the Loan Obligations by the Chief Commissioner of Maritime Customs from receipts of tax on foreign goods............ Tls. 35,079,055.59

(In the above is included the interest on deposits of tax receipts in foreign Banks, to the amount of Tls. 49,151.99) From the seven Likin Stations under the control of the Chief Commissioner of Maritime Customs, specially set aside to meet Loan Obligations............... Tls. 2,338,600.00

Total Receipts	37,417,655.59
Payments. To Loan dues	25,468,302.07
To Indemnities due	11,949,352.52
Balance in hand	500,127.95

Indemnity Obligations.

Receipts.	From balance of Loans ...... Tls.	11,449,225.57
	From proceeds of ordinary tax specially allotted to the indemnity funds (including Tls. 1,861,306.54 of old deposits and Tls. 4,159.52 of interest.)	6,205,525.00
	From appropriation from Salt Revenue	9,869,172.48
	Total Receipts .... Tls.	26,522,923.05
Payments.—To Indemnities		26,522,923.05
	Cash Balance in Hand .. Tls.	500,127.95

Another most satisfactory indication of China's ability and willingness to meet her engagements is found in the redemption of a fifth of the Nanking 8 per cent. Military Bonds. On February 20 a public drawing was held in Peking and Bonds to the value of $1,153,528 were redeemed. This must necessarily have a marked effect in increasing the belief of the Chinese themselves in the financial good faith of their Government. This will

be strengthened by the announcement recently published by Mr. Aglen, Inspector-General of Customs, to the effect that he had received the necessary funds for the service of the Domestic Loan of $16,000,000 and the supplementary Loan of $8,000,000, for the month of February.

REDEMPTION OF NANKING MILITARY BONDS.

The first drawing of the Eight Per Cent. Nanking Military Bonds for redemption, which took place at Chung Hua Men, Peking, on February 20 opens a new chapter in the economic life of China. The first domestic loan, known as the "Chao Hsin Loan," was not properly redeemed and the bad faith observed by the late Ching Dynasty in this connection had a disastrous effect on the national finances by destroying the people's confidence in the trustworthiness of the Government in financial operations. The drawing of bonds before the public on the present occasion demonstrates to the people in a practical manner that the Republican Government is sincere in its resolve to conduct business transactions such as the flotation of domestic loans along strictly business lines.

The gaily decorated pavilion that prominently rose to view in the outer palace compound on the Lunar New Year's Day did not signify as commonly supposed, a belated effort of the municipal authorities to augment the attractions of the old style celebrations, but that it was to be utilised for the drawing of bonds. The boldly displayed Chinese characters of the notice posted before the pavilion, coupled with the novelty of the event, attracted large numbers of curious spectators into the hall long before the appointed hour for the drawing. The weather was ideal and the sun reflected its beaming rays through the crisp atmosphere. The officials appointed to perform the various functions assembled on the platform at noon. They were Mr. Lu Hsueh-pu, Director of the Loan Dept., and all the members of the Department; Mr. Sah Fu-mou, Governor of the Bank of China; Messrs. Chen Ting-ming, Chien Mou-hsun and two others; Auditors of the Board of Audit, and several others from the Ministry of Finance and the Bank of China.

Mr. Sah carried to the platform the box containing lot-sticks, and opened it in the presence of the Auditors, who examined the sticks. This done, the Auditors scrutinised the account books. Messrs. Lee Kuang-chi, Shen Chang-chi and two others, of the Ministry of Finance, together with Mr. Lai Kuan-chun and three others, of the Bank of China, who were appointed as drawers, then took their seats. Meanwhile, pamphlets containing the bond numbers corresponding with the 116 lots were distributed among the audience. In all, $1,150,000 worth of Bonds were to be drawn that day.

As the clock struck one, the Band of the Peking Gendarmerie struck up lively tunes and the afternoon's proceedings began. Numbers of guests came in a steady stream and the hall was soon well packed. There were many foreign guests present.

Mr. Lu Hsueh-pu, Director of the Loan Dept., opened the proceedings with a speech, in the course of which he explained the origin and history of the 8 per cent. Nanking Loan, and outlined the purposes of the bond-drawing. He was followed by Mr. Sah Fu-mou, Governor of the Bank of China, who pointed out the significance of the occasion which bore testimony to the sincerity of the Government to meet its obligations to the people. At the conclusion of these two speeches, the drawing began, and the Band filled in the interval by discoursing selections of music. The recording accountants on the platform were kept busy in checking figures and attending to other matters. Bulletins in the form of large posters six feet square filled with Arabic figures were prepared and posted on the walls to announce the numbers drawn. In a short space of time the walls were covered with these large posters. It may perhaps be worth noting *en passant* that all these posters were written while the drawing was going on by a single person, Mr. Liang Yao-tsung, of the Loan Dept.

Minister Chow Tzu-chi and Vice-Minister Ching Shou-ling of the Ministry of Finance were also present. They received the delegates sent by the Governors of the various Provinces and held a lengthy conversation with them. At the close of the drawing, Mr. Yuan Chin-kai, the Delegate from Fengtien, and Mr. Lee Kuang-chi, of the Ministry of Finance, delivered speeches. Mr. Yang Tien-chi, one of the spectators present, also ascended the platform and spoke on the significance of the event from the spectators' point of view and concluded by saying that this occasion could not fail to leave a favourable impression on the people's mind regarding the credit of the Government. A group photograph of the assembly terminated the proceedings.—*Peking Gazette.*

PEANUT CROP IN SOUTH CHINA

Although peanuts, or groundnuts, are to be found in greater or less quantities throughout the Swatow consular district, nevertheless it can be considered as a crop of secondary importance only. Three varieties are known here, says Mr. Myrl S. Myers, American consulate, Swatow. The so-called native nut, which is scarcely larger than a pea, is now little cultivated, as its oil-yielding capacity is much inferior to the other varieties.

The varieties which are of commercial importance are locally called "small foreign" and "large foreign," the terms "small" and "large" signifying the principal difference. Although both varieties are sown in April, the harvest of the "small foreign" occurs in July and that of the "large foreign" about six weeks later, or in September. In harvesting, the plants of the former variety are pulled with the nuts attached, while in the latter the nuts must be dug. As to oil production, there is little difference, weight for weight, between these two varieties.

The principal districts of peanut cultivation are Cheng Hai, Chao Yang, Jao Ping, and Kityang. The "small foreign" crop, the harvest of which is about completed, is estimated to be between 60 and 70 per cent. of a normal yield. The reason for this partial failure is attributed to an insufficiency of spring rains and to damage done by the very heavy rains when the crop was approaching maturity. No crop statistics are available.

The exports from this port have been principally to Siam and the Straits Settlements. Peanut shipments were 1,228 tons in 1912 and 1,549 tons in 1913, while peanut-oil shipments totaled 1,645 tons in 1912 and 1,272 tons in 1913. It is stated that a considerable portion of the peanut oil which comes here from the Jao Ping district via Ungkung originates in the southern part of the neighboring Province of Fukien.

The present price of nuts of good quality delivered at Swatow is about $1.50 Mexican, or $0.69 United States currency, per bushel, unshelled. The oil is now selling for about $20 Mexican, or $9.16 United States currency, per picul (133⅓ pounds), and peanut cake, the oil having been expressed, at about $6 Mexican, or $2.75 United States currency, per picul. The cost of extraction is between $2.30 Mexican, or $1.05 United States currency, and $2.40 Mexican, or $1.10 United States currency, per picul of shelled nuts. For the average run of nuts about 100 catties (1 catty equivalent to 1⅓ pounds) of oil is obtained from 180 catties of shelled nuts. Antiquated methods only are used in expressing the oil.

It is the opinion of dealers that this year's acreage is about the same as the past few years. However, a report has been received from Ungkung that there seems to be a tendency to increase the acreage in the Jao Ping district. It might be mentioned here that it is in the Jao Ping district that the "large foreign" variety is chiefly grown.

Before the introduction of soya-bean oil some 40 years ago, peanut oil was largely used as an illuminant. Since then it has been employed principally for cooking. The nuts are also eaten roasted as in America.

APRICOT KERNEL PRODUCTION

The apricot kernels exported from China during the year 1912 amounted to 44,479 piculs, or 5,930,500 pounds. Of this amount 36,009 piculs, or 4,801,200 pounds, were exported from the port of Tientsin. Thus about 80 per cent. of the apricot kernels exported from China go through Tientsin. The two open ports in Shantung Province, Chefoo and Tsingtau, exported 620,800 pounds and 256,300 pounds, respectively. These exportations are practically all made to Europe—Germany, Great Britain, France, and Italy taking the largest amounts.

Of the 4,801,200 pounds exported from Tientsin in 1912, 3,199,400 pounds were sweet kernels, and 1,601,800 were of the bitter variety. The price of the sweet kernels, cracked and ready for shipment, is 40 to 45 Tientsin taels per picul, according to quality, which is equal to $17.87 and $20.10 gold per 100 pounds, respectively, at the rate of exchange 67 cents gold = 1 tael.

The price of the bitter kernels is much less, varying from 8 to 13 taels per picul, according to quality and market conditions. This is equal to $3.57 and $5.81 gold per 100 pounds, respectively.

The apricots ripen during June, and the shipping season starts about August 1, and continues through the remainder of the year. The apricots from which sweet kernels are obtained are larger than those from which come the bitter kernels. These apricots are not eatable. The largest quantities of them come from the districts of Yen Ch'ing Chou and Wan Ping Hsien to the north and west of Peking. The bitter kernels are produced in many districts throughout the Provinces of Chihli, Honan, and Shansi.

CHINA'S SALT ADMINISTRATION.*

During 1914 the net revenue derived from the salt tax in China reached the handsome total of Shanghai Taels 42,941,000 (or $58,826,000) as against Shanghai Taels 12,890,000 (or $17,670,000) in 1913. This result was more than twofold the estimate made by Sir Richard Dane on February 4, 1914, when, according to the Peking correspondent of *The Times*, he looked for a deposit in the banks at the end of the year of but $24,000,000. At that period the Chief Inspector had every reason to be conservative, but his modest estimate by no means signalized the limit of his ambition nor marked the degree of his energy.

Both Sir Richard Dane and Mr. Chang-hu, the head of the Central Salt Administration—a gentleman peculiarly equipped by experience and talent for his onerous work—were on the warpath for results, and likewise determined to render unto Cæsar all they could find belonging to Cæsar, estimates notwithstanding. The result at the end of the year more than justified their skilful handling of intricate and delicate problems which critics, at the beginning of the attempt to effect a reorganization of the Salt Gabelle, unequivocally condemned as impossible of satisfactory solution.

Magnificent as is the result for the year, it would have been greater had not the revenues suffered seriously from losses due to depreciated currency at certain sources of collection. For instance, in Szechuan province the collections were paid in depreciated paper notes. A total face value of over $7,000,000 was secured, but conversion into silver would have realized but about fifty per cent of the amount, and, when remitted to Shanghai, would have involved a still further loss in exchange into taels owing to the absence of proper banking facilities. The salt revenue therefore suffered a dead loss of something like $3,500,000 in that province alone. In Canton the direct loss from the same cause was $2,500,000, and in Honan it was $1,500,000. Altogether a total of $7,500,000 disappeared from the revenues collected, yet despite this and other difficulties the organization established by Sir Richard Dane and Mr. Chang-hu was able to obtain results such as had never before been known in the history of the Salt Gabelle in China, and which completely over-reached the anticipations of the Bankers and others who had reason to believe they knew the greatest expectations that could be entertained in connection with possibilities of reform.

In fact so dubious were the Bankers about the prospects of sufficient funds being derived from salt collections for the service of the Reorganization Loan, which was floated in 1913 and secured upon the salt revenues, that they had it stipulated in the loan agreement that pending the reorganization of the Salt Administration, the Provinces of Chihli, Shantung, Honan and Kiangsu should pay monthly into the Banks the funds necessary to meet the service of the loan. On their part the Bankers agreed that so soon as the revenue collection of the Salt Administration over a period of one year should be sufficient to cover the service of the loans and obligations secured thereon, including that of the Reorganization Loan of £25,000,000, together with a reserve fund sufficient to cover a further half-yearly interest coupon of the latter, the monthly contributions should be suspended. To the surprise of the Bankers the inflow of collections from the Salt Administration became so steady and of such volume that not only were they pleased to be able to agree to the suspension of the provincial contributions; but were able to release to the Government for the payment of loans, indemnity,† and administrative purposes something like $42,000,000, and still have a balance in the banks of $15,000,000 at the end of the year. Before the war broke out, too, they had expressed the confidence that the revenues of the Salt Administration were sufficient as security for still another loan. No greater testimony than that is needed to indicate the efficacy of the reforms so far inaugurated or the potentialities of the Salt Administration as a steady source of revenue.

Not only was 1914 eminently satisfactory. This year is opening with the brightest prospects, and up to the 11th of February—the eve of the end of the lunar year, or the beginning of Chinese New Year as it is called,—the Bankers were in the happy position of being able to release to the Government for administrative purposes somewhat over $10,000,000. This, and other sums which the Government had available from other sources of revenue, enabled the old year end to be met with equanimity and the new one to be faced with considerable satisfaction. There was no necessity to whip the impecunious devil round the financial post, as was done the previous year in an endeavor to raise the wherewithal to make ends meet.

One of the most striking feathers acquired for the cap of the Salt Administration in 1914 is that its net revenues topped the gross revenues of the Maritime Customs service by over Taels 1,000,000. The Customs service has always been looked upon as the chief stable source of revenue in China, and it has been, but now that the Salt Administration is displaying such splendid results the Customs will have to pay particular attention to its laurels. Those in charge of salt affairs have merely had their appetite whetted by results and as the reorganization has only commenced, practically speaking, they are determined to make the annual returns mount to the utmost possible extent. At least an additional $15,000,000 is expected to be banked in 1915.

The chief improvements so far introduced are the method of weighing in from source of production and issuing salt; the systematizing of the accounts and the collection of the tax before the removal of salt for consumption from the depots. In the past taxes have been collected on occasions a year after salt has been removed or paid for in depreciated native orders or promissory notes. For 1915 the tax has been increased in several districts, but the increase in collections from that direction means a concurrent increase in expenditure upon an efficient service for the prevention of smuggling and fraud.

An improvement now being introduced, and one which will be of exceeding importance in establishing firm control over the product, is the construction of central depots in various districts for the storage of salt. In most places at present salt is stored in great heaps in open yards, sometimes covered with matting and sometimes not. It is proposed to do away with this crude system and replace it with modern storage, the advantages of which system need no dilating upon.

Another improvement that will gradually be undertaken, and one which is necessary, is the suppression of refractory commissioners in distant districts. Rules and regulations have to many of these officers no meaning; they reign in their sphere as independent beings, prompted to do so only because it has been the life-long custom heretofore; and printed rules are regarded by them only as so much paper gracefully contributed by Peking in a spirit of magnanimity to paste up the holes in the walls of their yamens. All these officials have so far deemed it necessary to do was to keep Peking quiet by forwarding small periodical contributions in the way of funds representing the proceeds of the salt tax. No proper accounts were kept, and confusion reigned supreme with the result that those responsible never knew exactly what the Salt Commissioner should account for. It is, of course, the knowledge of the existence of such things in the salt tax system of China that persuaded old residents that reform was impossible. But other problems of the kind have been met and solved, and we may soon see definite efforts being directed to the education of the recalcitrants in their specific duties. "Olo custom" is gradually being knocked on the head, and it will not be long before the tenacious old excuse is properly shrouded and relegated to the limbo if Sir Richard Dane and Mr. Chang-hu have their way.

The reorganization of the Salt Administration was, of course, stipulated in the agreement for the Reorganization Loan, signed on April 26, 1913. Sir Richard Dane acts as Chief Inspector under the Loan Agreement, with a foreign Co-Inspector, and various District Inspectors have since been appointed, their duties being laid down in precise regulations promulgated by the Chinese Government. In addition to his work as Chief Inspector,

*An illustrated historical sketch of China's Salt Gabelle prior to the reorganization at present being effected, was published in the FAR EASTERN REVIEW of December, 1912.

†The estimated annual charge on the Salt Administration is Haikuan (or Customs) Taels 20,751,000.

Sir Richard Dane also advises the Chinese Government on all questions of Salt Administration. Mr. Chang-hu is the Chief Commissioner, or Administrative Head of the Salt Administration, and he is also Chinese Chief Inspector under the Loan Agreement. The Central Salt Administration is the organ under which both these officers act, and the head of that Department is the Minister of Finance, at present Mr. Chow Tze-chi. If, for instance, Sir Richard Dane gives any advice to the Government and that advice is accepted it is the Central Salt Administration which issues the necessary orders to put it into effect.

The task of the District Inspectors is to supervise the weighment and issue of salt and to collect the revenue in the salt producing areas, or to supervise its collection. It was naturally a difficult matter to introduce this important change, but steady progress has been made. There was obstruction in many districts, and the old salt officials of Yunnan and Canton in particular sustained determined opposition to it, though they eventually capitulated. Through the District Inspectors it is hoped eventually to have a check placed upon every dollar collected as salt revenue and to have all the funds flowing in the proper channels, and under Government control.

A portion of the revenue collected in certain districts is sent forward by means of what are known as Transportation Agencies—(organizations which buy and convey the salt from the producing districts)—and is lodged in the foreign banks. Over this portion of the revenue the Central Salt Administration has not the same control as over the money collected by the District Inspectors, but plans are being introduced to rectify this state of things. If these plans are properly carried out the result will be a marked increase in the collections secured for deposit.

The Chief Inspectorate, as well as the District Inspectorates, is held responsible under the Loan Agreement for the salt revenue. The Inspectorates are to weigh and issue salt, and collect taxes, make deposits and proper disbursements, audit and report accounts, and render statistics. In accordance with the Loan Agreement all revenues are deposited in one of the nominated foreign banks and, if there is no foreign bank in a province, then in a branch of the Bank of China or the Bank of Communications. If there are neither of these banks available, which happens to be the case in a few places, then the funds are retained by a bank approved by the Group Banks.

In order thoroughly personally to understand the conditions existing in the various producing districts, Sir Richard Dane has travelled through and reported upon those of Manchuria, Shantung, Chihli, Kwantung and Fukien, and he is at present on an extensive tour which will take him through Yunnan and Szechuan provinces, and back down the Yangtsze to Hankow. This first hand knowledge on the part of Sir Richard will be of immense advantage to the Central Government, and will enable him to introduce measures not only to enhance the collections but also to remedy many of the abuses of which so many complaints have been made in the past.

Altogether there are ten salt producing districts, namely Fengtien (Manchuria), Changlu (Chihli), Shantung, Liang-hwai, Liang-chi, Fukien, Kwangtung, Szechuan, Ho-tung, and Yunnan. In each of these districts is established a District Inspectorate consisting of one District Inspector, and one foreign co-inspector, under whose control is a staff of Chinese assistants.

To facilitate the administration the salt-producing and salt-consuming provinces have been divided into two divisions. The first division is composed of the salt-producing provinces of Fengtien, Chihli, Shantung, Shansi, Kansu, Shensi and the northern part of Kiangsu, and the salt consuming provinces of Kirin, Heilungkiang, Honan and the northern part of Anhui province. The second division is composed of the salt-producing provinces of Hwai-nan in Kiangsu, Liang-chi, Fukien, Kwangtung, Szechuan and Yunnan, and the salt-consuming provinces of Kiangsi, the southern part of Anhui, Hupeh, Hunan, Kwangsi and Kweichow.

The eventual perfection of the organization now in course of development under the able direction of Sir Richard Dane and Mr. Chang-hu will be a tremendous blessing to the Government, and the lesson already being learned from the work accomplished by the Central Salt Administration is to be applied to other sources of revenue, such as the Land Tax, so that the Government may reap the whole of the financial harvest that is its due.

LEATHER GOODS IN SIAM

The leather manufactures imported into Siam are classified by the customs under the heads of boots and shoes; saddlery; and leather manufactures, other sorts. The total value of these imports for the fiscal year ended March 31, 1913, was G. $184,599, a decrease of $455,148, as compared with the previous year. This large decrease appears to have been due to overstocking in the preceding year, and general trade depression in 1913.

The value of boot and shoe imports for the fiscal year 1913 was $62,990, as compared with $101,112 for the preceding year, a decrease of $38,122. This decrease may also be accounted for by the increasing demand for the home-made shoes of the Chinese bootmakers, who have steadily improved the style and quality of their output; moreover, these articles are cheaper than the imported goods, and can always be obtained in sizes to fit or be made to order. The home industry in footwear is entirely confined to the above-mentioned Chinese handmade shoes, as there are no shoe manufactories in Siam using machinery.

Shoe imports from the United States showed a decline from $1,403 in 1912 to $1,117 in 1913. The superiority in style and durability of the American shoes, as compared with those of European and local make, however, is admitted, the only drawback being the higher price. As in former years, the heaviest shipments of footwear continue to come from the United Kingdom and Germany.

The saddlery imports have shown very little progress during the last five years, the total value for 1913 amounting to $19,510, against $15,889 for 1909. As in former years, most of trees imports were supplied by the United Kingdom. Leather goods other than footwear and saddlery also showed a decline from $237,761 in 1912 to $102,158 for 1913.

The customs do not furnish any information as to the nature of the leather imports. However, as there are only one or two small tanneries in Siam, supplying sole leather only, the leather imports must consist chiefly of materials used by the Chinese bootmakers, such as sole leather, and uppers of calf, tan, glazed kid, etc.

HIGH LIFT TURBINE PUMPS.

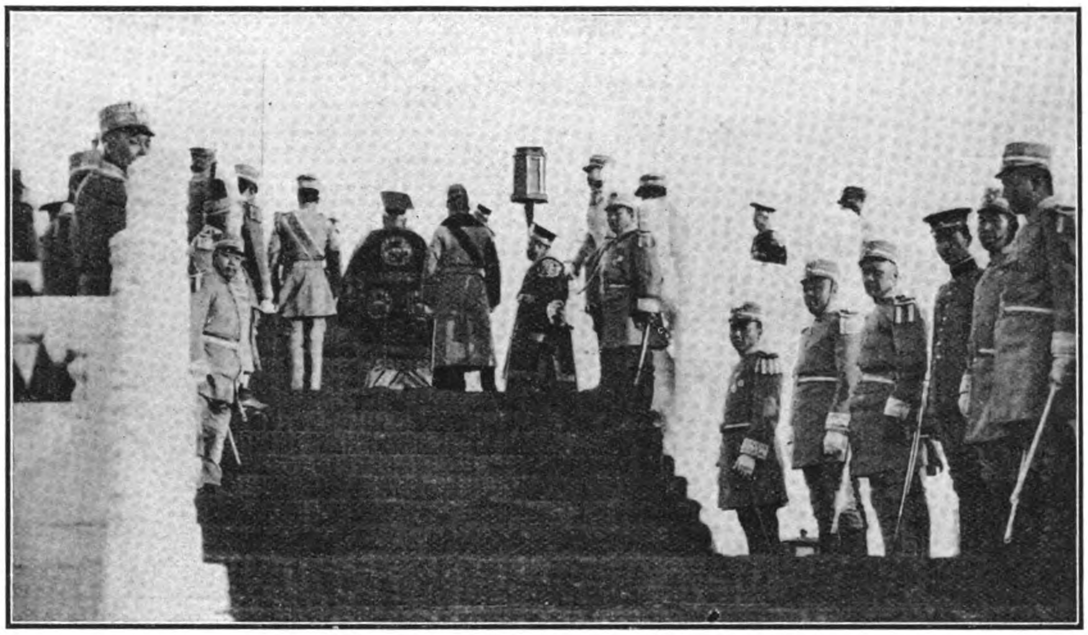
Messrs. Mather & Platt, Ltd., of Manchester, have just issued a new catalogue relating to their patent High Lift Turbine Pumps. It is a most attractive publication and gives very full details of the various types of pumps manufactured by the firm.

As in many other fields of engineering activity, Messrs. Mather & Platt were pioneers in the construction of pumping machinery. Following the invention of the Turbine Pump by Professor Reynolds in 1878, Messrs. Mather & Platt constructed the first pump of this type and, in the years immediately following, many of these pumps, widely known by the name of the "Mather-Reynolds" were installed for belt driving at moderate speeds. With the advent of the high speed electric motor and Steam Turbine the possibilities of direct driving Turbine Pumps were realised. It is due to this great advantage of direct driving, combined with their lower initial cost, greater adaptability, simplicity of operation, and small space occupied, that Turbine Pumps to-day hold the field as pumping machines.

After describing the special construction by means of which the efficiency and reliability of Messrs. Mather & Platt's pumps is attained, the list details and illustrates various types capable of dealing with a variety of duties. Amongst them are Horizontal High Lift Pumps, Colliery & Mining Pumps, Sinking Pumps, Single Chamber Pumps, Fire Pumps, Hydraulic & Boiler Feed Pumps, Automatically Operated Pumps, Well Pumps, High Lift Turbine Pumps applied to bore-holes, etc. The list contains descriptions of pumps which have been adapted for duties to which they were hitherto considered unsuitable, such as Hydraulic & Boiler feed purposes.

Recent experience has enabled Messrs. Mather & Platt to construct Rotary Pumps for extremely high pressures. Their adoption in collieries for different heads and for varieties of waters has consequently increased very considerably.

All who are interested in the transplantation of water in bulk should apply to Messrs. Mather & Platt, Ltd., for a copy of this admirably compiled new pump catalogue.



President Yuan (Central Figure) during a period of the ceremony on the Altar of Heaven.

PRESIDENT YUAN SHIH-KAI AT THE ALTAR OF HEAVEN

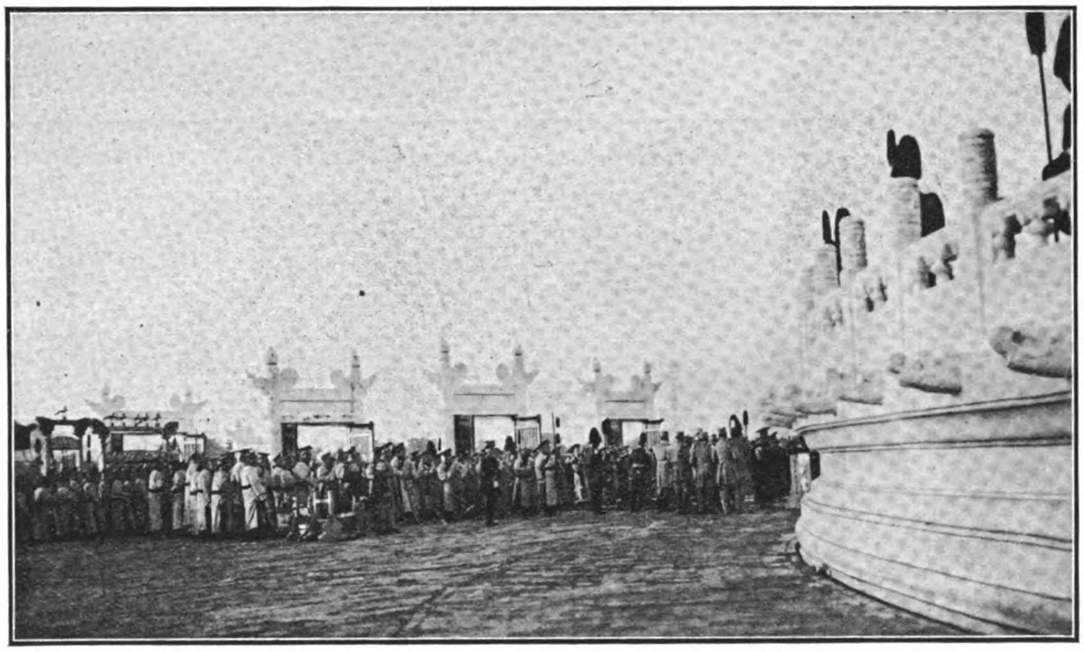
BY FREDERICK MOORE

[EDITOR'S NOTE.—*The following illustrated description of the most impressive ceremony performed in China is unique inasmuch as it is a record of the first time in history that the President of a Republic has performed rites at the altar of Heaven which hitherto have been reserved for Emperors, and likewise it is the first occasion, so far as we know, on which any foreigners have been witnesses of the ceremony. That distinction is enjoyed by Mr. Frederick Moore, who supplies this article, and Mr. John D. Zumbrun, Photographer of Peking, who took the photographs. An interesting point about the latter is that they were taken at seven o'clock on the morning following the shortest day in the year.*]

On the occasion of the Winter Solstice, honoured by a long line not only of Monarchs but of Dynasties, President Yuan Shih-kai went in state from his palace to worship Heaven at the famous open Altar, that was formerly regarded as the Centre of the Universe. In every respect the ceremony was carried out with the splendor, and something of the mysticism, that surrounded it in former days.

The Temple of Heaven itself is the first show place in Peking. Within a vast enclosure covring many acres stand the temple, the altar, and many buildings, the colors of which are of great and varied beauty. The altar is a white marble dais, circular in form, and of proportions and simplicity that have inspired the wonder and admiration of men from every land. There is no covering to it; it is open to the sky and Heaven.

This white altar was a brilliant sight as the sun rose on the clear, cold morning of December 23. At every pillar of the balustrade stood a spear bearer in uniform and plumes like a modern European lancer in parade colors. In the enclosure immediately below were the musicians wierdly clad in robes of blue studded with stars: and their instruments were those of the days in which Confucius lived. There were probably two hundred of them. There was a troop or choir of small boys who played reed pipes, with pheasant feathers five feet in length swaying from them. The stringed instruments, giving forth music like harps, were longer than anything we know in this day—some six or eight feet. Then there were bells of the extraordinary shapes and tones of two thousand years ago. The enormous drum stood high up on a stout pole supported by dragons' heads at the base, and over it



The general scene, including musicians, soldiers, choristers and officials in the enclosure below the Altar during the ceremony.

hung a canopy of red and gold.

The musicians stood in two groups at the sides of the main aisle to the altar, the southern aisle; and between them the officials, those who took no part in the preparation of the sacrifices, were ranged in groups according to their grades, ready to kowtow at the proper signal. Scattered round about this orderly arrangement of men in robes and hats of a style worn centuries ago, were military officers and police, the police in black and gold, and the military men in the brilliant modern uniforms which the Republic has adopted. In all the crowd there were but two foreign civilians, one being the writer; and this was the first occasion that a foreigner has ever been admitted to this sacrifice.

President Yuan arriving at the grounds, wearing a military uniform and being borne in a sedan chair.

Group of choristers with reed instruments surmounted by the tail feathers of pheasants.

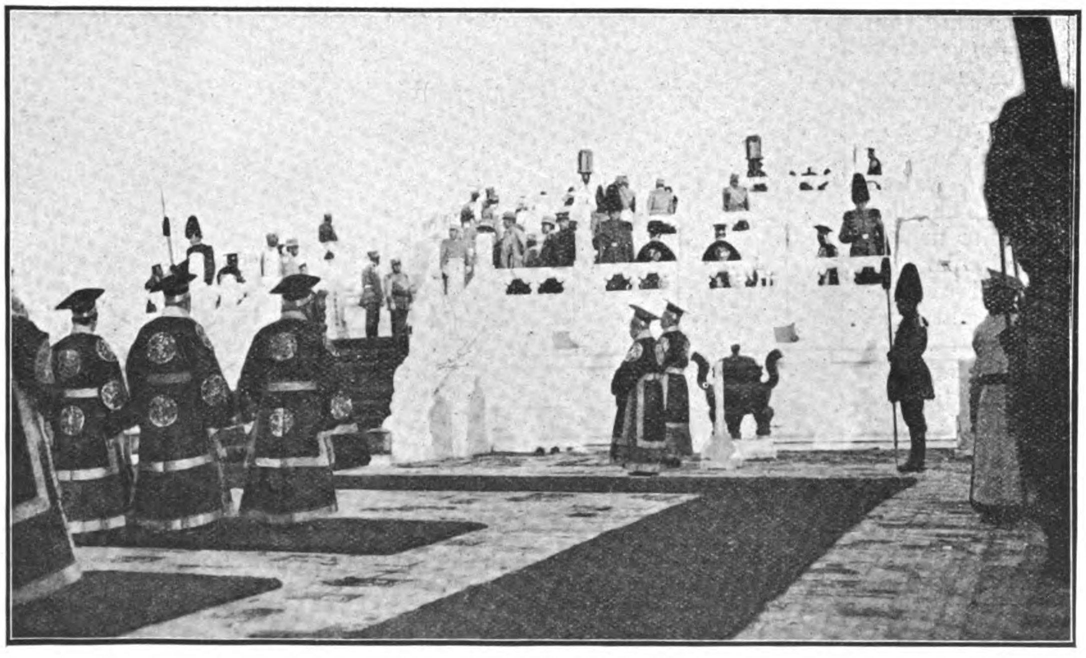
Just as the sun rose the President's motor car, surrounded by a troop of officers on galloping Mongolian ponies, drew up at the last gate but one,—for one must pass through many gates before reaching the Altar of Heaven. The President, likewise dressed in uniform, descended from the car and got into a sedan chair, which was borne by eight men through the gate and into a red tent-like, impromptu building,—not the permanent structure in which the Emperor used to robe. And in a few minutes he came out robed like those officials who awaited him, except that beneath his overgown of blue the stripes of an imperial underrobe trailed, and on the overgown twelve, and not eight or less, conspicuous medallions shone, formed of interwinding dragons and other symbols.

The ceremony lasted for an hour, terminating with the burning of the sacrifices in a great green-tiled brazier beside the altar. Incense, the hair and flesh of a calf, the finest silk, and a tablet sealed and signed by the President, were put into the flame.

It was a bitter cold day, and no sooner had the President passed out of the inner arches than the soldiers, who had stood on guard over night, broke ranks, some of them climbing upon the sides of the great brazier and warming themselves by the sacrificial fires.

For this worship, as for that at the Confucian Temple some months before, the President was criticised to some extent in private conversation, although the press took little note of the event and commented only favorably. It was said in private that Yuan Shih-kai was assuming imperial functions. The President, however, explained in a Mandate that he performed the ceremony only as the representative of the State, in which, he said, authority is now vested. The Mandate, as translated by *The Peking Gazette*, runs as follows:—

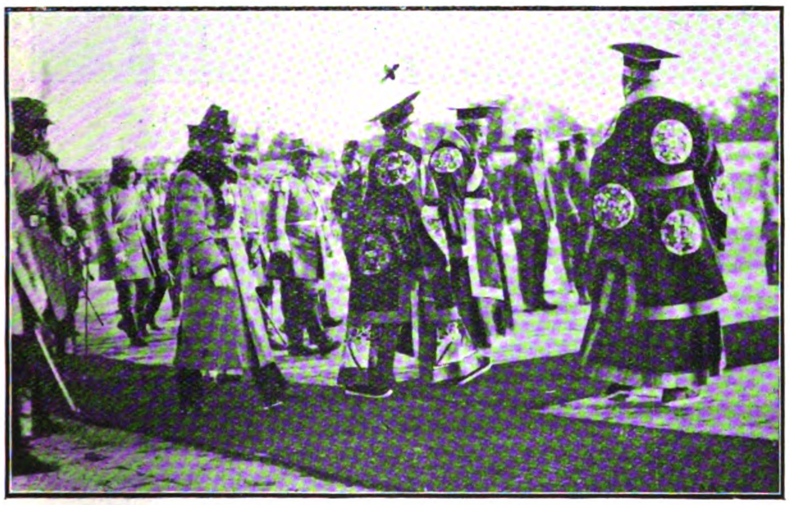
"The ceremony for the offering of bullocks has been recorded in Ancient Records, and the system of altars is



A general view of the Altar while the ceremony was in progress.

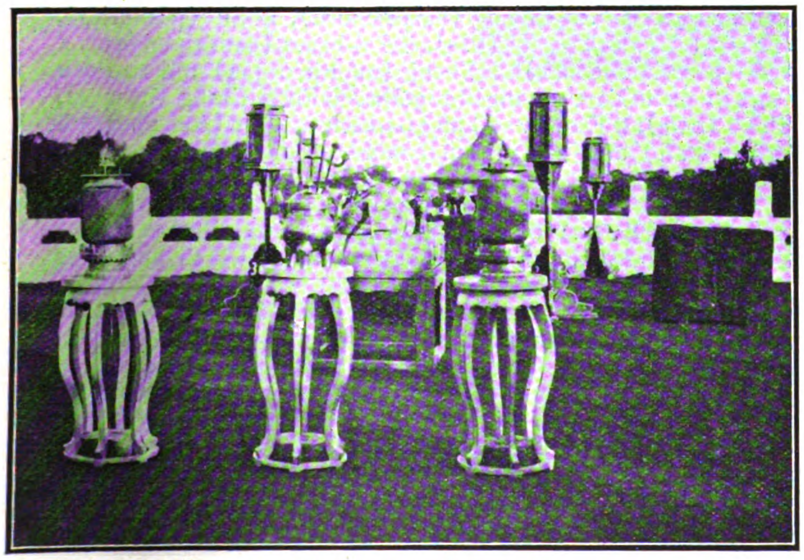
President Yuan in ceremonial robes, surrounded by officials and government officers, proceeding on foot to the Altar of Heaven.

Ceremonial officers descending from Altar.



President Yuan leaving the Altar.

Officials at the sacrificial tables.



Sacrificial urns and implements.

Minor officials descending from Altar bearing the sacrifices to the sacrificial fires.

given in detail in Chow Kuang. The Ancients respected the Great Heaven, hence they offered it sacrifices. When we review the Ancient Records we find the matter of sacrifice to occupy a most prominent part. However, since the revolution all kinds of opinions have presented themselves to the public. It is said that the system of honoring Heaven originated from the monarchial system, and that the practice of offering sacrifices in the suburbs should not be retained by the Min Kuo. Thus the ceremony should be abolished as was the case of the suggestion to abolish the offering of sheep in Confucius' time. Indeed they have held the doctrine of equality of all the people, and yet they have failed to appreciate the sincere respect for the presence of God. They think that to worship ancestors is an act to be performed by the sovereign of a nation, ignoring the fact that to remember the origin from which one derives his being is a common principle of society. They have caused the abolition of the sacrifice of bullocks, and made altars a heap of ruins. Certainly this is not the way to manifest the Grand Ceremony and to honour the august traditions. Heaven countenances what is countenanced by the people, and Heaven hears what is acceptable to the ear of the people. Anything which the people ask will be granted by Heaven. Therefore in ancient times when the sovereigns governed the people they reigned in the name of Heaven. It meant that an eye was there always looking down with power, and showed that there was the presence of the Unseen to afford just protection. Such sentiment corresponds exactly with the spirit of republicanism.

The Standard Ceremony for the Worship of Heaven, which was passed by the Political Conference and fixed by the Bureau of Rites, has already been promulgated. In a petition of the Ministry of Interior it is now stated that as the 23rd instant of the 12th month of this year is the day of the Winter Solstice, during which date the Ceremonies of the Worship of Heaven should take place, therefore I, the President, have decided that on that date I will respectfully perform the ceremonies in person at the head of all the officials in the capacity of the representatives of the people of this country. All the local officials, as representatives of the people whom they govern, are hereby ordered to offer sacrifices in their respective localities. Thus the ancient ideas will be preserved and the great blessings from Heaven may be appreciated.

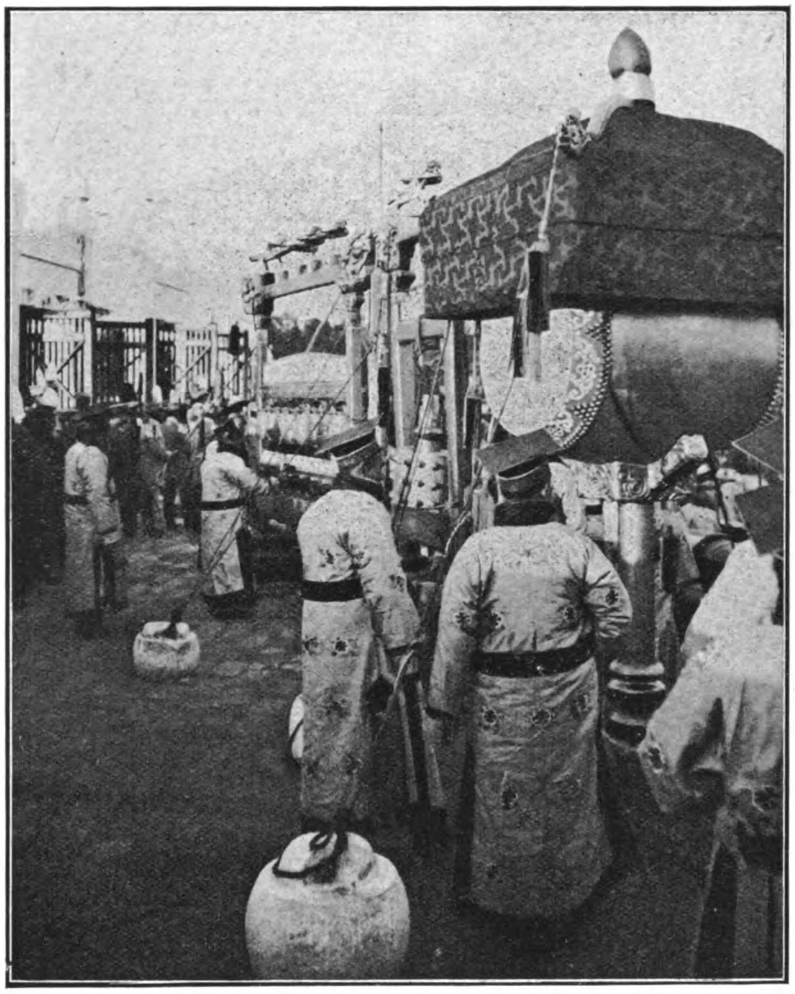
We take the following facts from the interesting description of the ceremony that appeared in *The Peking Gazette* on the day of the ceremony.

The Grand Sacrifice of Heaven has been resumed to-day after having been left in oblivion for three years since the abdication of the Manchu Emperor. The ceremony, with certain unimportant variations, followed the ritual prescribed in the Book of Rites which is described below in outline. Elaborate preparations have been made and care has been taken to insure the proper carrying out of every detail, as this is the function of functions, which in former days only the Emperor and his representatives were considered fit to perform. To suit the conditions of the Republic the rule is altered that every family may, if they desire, worship on a simpler scale. It may be interesting to add here that the people of China, so long as they remained un-Christianized, have always worshipped Heaven, though not on the winter solstice day. Almost every family sets up an improvised altar in the well-swept court-yard on the New Year day and offerings of cakes and fruits are offered with the burning of incense. The new rule, however, requires that the family worship of heaven should be performed on the day of the winter solstice with the additional rites of offering libations and burning of silk.

In order to impress upon the officials the importance of the occasion and that they may sanctify themselves, a mandate issued three days prior to the day of sacrifice, called on the officials to prepare their hearts and solemnise their minds, and to keep "preparatory fast" for two days and "devotional fast" for one day. When in "preparatory fast" the official can attend to his ordinary duties but not to attend funerals, visit the sick, drink wine, make merriment or eat meat, fish or eggs. When keeping the "devotional fast" everything except sacrificial affairs must be put aside.

At daybreak yesterday, being the eve of the solstice, the temple and the sacrificial tables and vessels were arranged by the Official Attendant in person in the following order:

On the day before the solstice and just after daybreak, the official Attendant sweeps both the inside and the outside of the Altar, so that a Resting Shed may be erected on the eastern side of the main road just outside of the Gate of the left wall of the Altar. Smaller sheds are erected on the western side for other officials. The Woodman prepares the Altar of Burnt Offering by placing firewood on it, and other attendants place the necessary tables in the First Circle of the Altar according to the plan approved and promulgated.



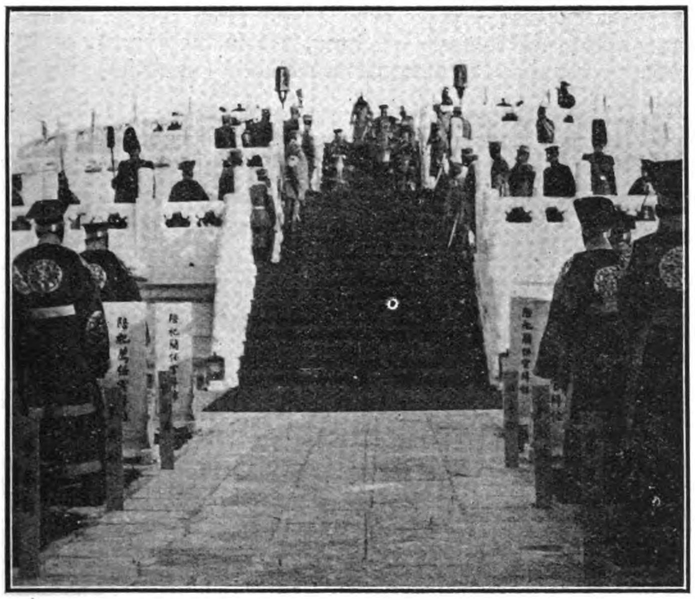
Among the ancient drums and bells during the ceremony.

In the same afternoon the Official Attendant prepares the Prayer Tablet and places it in a clean room. The tablet is made of blue paper and inscribed with letters of vermillion. He then goes to the slaughter house and watches the slaying of the sacrificial bullock, and sees that the blood and hair are placed in a tray and carried to the Meat Room. Next he places the bullock in the sacrificial tray and the rice, cereals, cakes and fruits in their respective receptacles.

At daybreak the Official Attendant arranges the different vessels on the tables in the Altar Circle, and the gongs and musical instruments on the sides of it. These instruments are arranged below the steps of the third circle in the following order: On the eastern side, 1 big bell and 16 harmony bells, a drum, a wooden drum, a standard, and on the western side, 1 big gong (ch'ing) and 16 harmony gongs as well as a Yu'an instrument shaped like a recumbent tiger. The musical instruments which consist of 10 Ch'ing (harpsichord), 4 Se (psalteries), 10 Hsiao (clarinet), 6 Ti (fife), 6 Pai-hsiao (pandean pipes), 2 Huan (porcelain conch), 2 Sheng (mouth organ) and 10 Pofu (a sort of drum) are arranged together with 2 Ching (banner), 2 Chieh (pole), 2 Kan (staff) and 64 each of Ch'i (pole axe), Yu (feather staff) and Yo, in equal numbers on each side of the altar steps.

The vice-Minister of Interior acting as the Chief Inspector, then ascends the Altar by the flight of steps on the west side and inspects the arrangements one by one, after which he leaves the Altar by the same flight of steps.

Then headed by his retinue the President ascends the Altar by the flight of steps on the southern side and takes his position in the Second Circle facing north. At the same time all the other participants also take their places according to the approved plan. The ceremony of Lighting the Bonfire is then performed. At the cry of the Herald the President bows four times, which example is followed by the other officials, while the musicians play. The tray containing the blood and hair is carried forward and placed on the table.



On either side of the pathway to the Altar were ranged officials of the various boards, each in his appointed standing place.

The next part is the offering of the silk. This is done with the President advancing to the first circle and lifting the silk handed to him by the Silk Carrier. The silk is afterwards placed in the centre of the table and the President returns to his kneeling place outside the First Circle.

The musicians then strike up the music of Meat Offering, and immediately an official removes the tray containing the blood and hair. Another official comes forward with a pot filled with hot soup, which he hands to the President, who lifts it as high as his face and returns it to the official. The pot carrier then pours the soup on the meat in the tray three times and descends the altar by the steps on the west side. The President then returns to his kneeling place and the music stops again.

The first prayer is now offered in the following manner. At the announcement of the Crier the goblets are filled with wine, and immediately the Head Musician gives the command to start the music of the First Prayer, which is accompanied by the dancers going through the evolutions of Kan-Chieh. Meantime the President is ushered again to the First Circle and given the goblet, which he lifts as high as his face and it is handed back to the Cup Bearer who pours the contents in a tray. The President next advances to the Table of Prayer and stands in front of it. The Chanting Official takes his position on the right of the President and reads the Prayer, which is worded in the following senses.

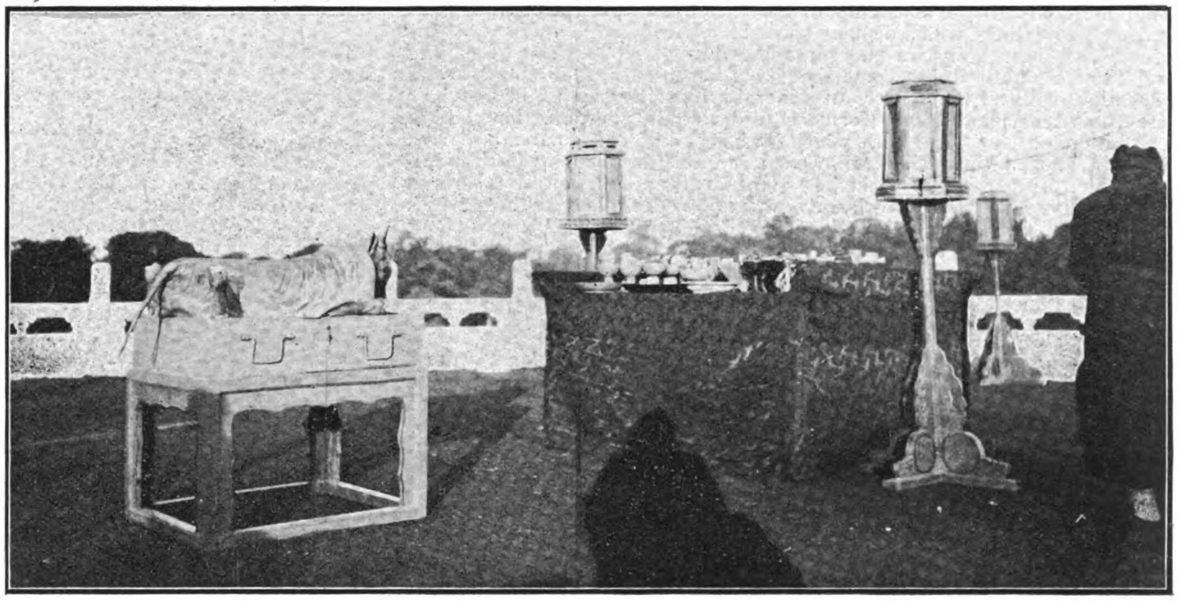
" On the.. .. .. ..day the Great President.. .. .. ..representing the citizens, craves to pray to the Heaven above and say, Heaven thou dost look down on us and givest us the nation. All seeing and all hearing yet how near and how close. Now we come before Thee on this Winter Solstice day when the air takes on new life, in spirit devout, ceremony old and with offerings of jade, silk and meat. May our prayer and offerings rise unto Thee with incense sweet. We sanctify ourselves and pray for Thine acceptance."

When the reading of the prayer is over, the President lifts up the Prayer Tablet and hands it to the Chanting Official, who places it in a basket. The President then retires to his kneeling place and prostrates himself four times, which example is followed by the other officials. The Second and Final Prayers are offered in much the same way accompanied by particular kinds of music.

This part of the ceremony is symbolical rather than real. The blessings are symbolized by a cup of wine and a portion of meat, which are handed to the president by an official on his right, one by one. These the President lifts with two hands in a reverential manner and hands to the official on his left. The President then returns to his place of worship and prostrates himself four times, followed by his subordinates. Some of the vessels containing grain, etc., are now removed to one side and Green Jade (beryle) is offered amidst music.

The Great Ceremony is closed with the Burnt Offering or the Watch of the Bonfire as it is called in Chinese. With due solemnity the Chanting Official carries the chanting tablet, the Silk Carrier carries the basket, and the Cup Bearer carries the wine and cereals to the Altar of Burnt Offering and places these things on the firewood. They are followed by the President and his retinue. The former takes a position west of the Altar and facing it. At the command of the Crier the fireman lights the wood and the ceremony is concluded. The President, heralded by the Heralds and Ushers, returns to the resting shed and there changes his dress, after which he returns to his palace, and the grand Sacrifice is at an end.

It may be interesting to remark that in order to suit the circumstances of the time much of the old form of ceremony has been discarded. To take all possible religious tint out of the ceremony, the old custom of receiving and sending off the god has been cancelled. A bullock used to be burnt with the bonfire but this is now considered meaningless and is therefore eliminated from the programme. Incense is burnt as a token of the ascending prayer and devotion of the worshippers. In the matter of prostrations the old custom of kowtow nine times and kneel three times is abolished and in its place the ceremony of prostrating four times has been adopted. The reason given is that to show extra devotion and reverence the ceremony of prostrating twice, which was the highest form of respect among men in ancient times, is doubled. In order to avoid confusion and assure reverence, the old custom of offering the bullock has been changed into offering of the meat, that is, pouring the hot soup on the meat already placed on the table.



The bullock and edibles that were offered as a sacrifice to heaven.

The most important part of the change comes at the conclusion of the ceremony when the Blessings are received from Heaven. This, according to the old suage, only the Emperor was fit to do and he was the only person supposed to be blessed by Heaven a she was the person who offered the sacrifice. But as the nation is a Republic and the President is the representative of the citizens, he only receives the blessing on behalf of

the citizens. Thus if he should be unable to attend the ceremony a delegate may be appointed in his place and receive the meat and wine of blessing just like the President himself. Another sign of republicanism is the change of the name of the music. The music of the worship of heaven was called Hsia in the dynasty of Chow, Yung in the dynasty of Sung, Yia in the dynasty of Liang, etc., etc. Now that the nation is a republic (kung-ho), the music is called Ho.

CHINA NEEDS EXPERTS: AND HOW TO GET THEM

By Ching-Chun Wang, M.A., Ph.D.

Sometime ago a cartoon was drawn which showed that the only beings who could extricate China from her difficulties were experts. After examining the situation in China and the history of other countries, I agree, entirely, with the cartoonist and believe that one of the most important things at which China should aim in her regeneration is to train up, employ, and control a sufficient number of experts.

We may well say that the 20th century is a century of experts. The complexity of civilization, the growth of accurate knowledge, the progress of invention and the keenness of competition which renders a high degree of efficiency alone profitable, as well as the necessity of organization for conducting modern business or government affairs efficiently—all these modern things have brought about specialization of occupations. Therefore, many branches of industry, commerce and governmental administration which were managed by priests, poets, scholars, or men of general knowledge, can now be managed only by experts, if any degree of efficiency is expected.

Since the discovery of the law of division of labour, the bounds of human knowledge are growing faster than education. A Casaubon who had mastered everything known in his day, has long been an impossibility. With the vast progress of research in all fields, specialization in knowledge is daily becoming greater and greater. Hence we have every reason to believe that with the diffusion of knowledge, the more men learn the more they will require the services of those who know the most about particular subjects.

This process of specialization is spreading the world over, and experts are needed in place of the ordinary scholar. Seventy years ago an ordinary merchant in America or Europe was deemed fit to manage a factory or a railroad, just as in China where a purchased title was regarded as sufficient to qualify the holder to do everything from acting as a judge of the Supreme Court to the managing of a bank. But now these pursuits have become professions which demand special knowledge and experience. This process has been going on and spreading throughout all fields of activity and thought, until it has come about that a man of good intelligence and education, with all the sources of general information within his reach, is less competent than he was formerly to decide the questions that arise in a vocation not his own, with which he has had no particular familiarity. Without going into much detail, we can see that those countries or industries which prosper are those which have the largest proportion of experts in their service, while those which are now weak or declining are those which employ men of general knowledge instead of experts. This is so obvious that we need hardly emphasize further or enumerate any particulars. In fact, it may be well said that the strength of a government from now on is going to vary directly with the number of experts in its service.

NEED OF EXPERTS IN ANCIENT EUROPE

A brief review of history will help to show the need of experts. Athens was the cradle of European civilization. It was both powerful and prosperous for a time, but its downfall was as complete and dramatic as its rise was fast. The downfall of Athens, despite its prosperity and advancement in civilization, according to some best authorities, was largely due to the lack of experts in its service. According to the then existing system, the officers were called to office by lot and each officer could hold office only for a single year and was practically ineligible for a second term. Under those conditions, no official had any expert knowledge of the work assigned to him, however familiar he might have been with the discussion of political questions or affairs of a general character, nor could he in the short period of a year acquire any considerable experience in the management of the affairs of his office. In short, governmental affairs were handled by amateurs. With the exception of the slaves who did purely routine work, there were neither any expert subordinates nor advisers to assist the officials. Such a system did not work badly in a simple community where the various branches of the public service involved few things with which an ordinary citizen might not be familiar in his daily life, especially when there was a Pericles directing the affairs of state as a sort of glorified boss. But it could not meet a severe strain. We may safely assume, as President Lowell said, that the lack of experts contributed to the downfall of Athens before the blows of a highly organised Monarchy of the same race under Philip of Macedon.[1]

The Romans were also short of experts. Under the Republic the officials were chosen also for a single year, and as a rule, were not re-eligible. The only difference between Rome and Athens was that the government of the former was in the hands of a ruling class, and that no one could hold a higher magistracy who had not previously had some experience in the offices of the official ladder. This system was better than that of Athens.

1.—Lowell, " Public Opinion and Popular Government " p. 265.

Although it did not provide sufficient experts it worked well enough so long as Rome was a small Italian State with simple industries and few foreign complications; but when she acquired dominions beyond the seas, when the contact with the East destroyed her old traditions of discipline, when the people were called upon to administrate provinces, the system broke down. The lack of experts in the public service began to be of serious consequence, and Rome was brought to an end, not by external force, but by internal weakness and constitutional instability. Of course, there were other causes contributing to its downfall " but surely it is abundantly clear that government by a succession of amateurs, without expert assistance, had proved itself hopelessly incapable of maintaining an orderly administration on so gigantic a scale."[1] The State, in other words, had outgrown its machinery.

It was by the creation of a new organization that the Roman Empire prolonged its life. During the century following Augustus, the Emperors used their power to train up, at first, their immediate followers, and later free citizens; and gradually a permanent civil service grew up, which men of ability entered young and followed as a life career. The preservation of the Roman dominions for so long a period as well as the much longer life of the Eastern Empire, must be attributed in a great part to the employment of a larger number than before of trained expert officials by a practical government.

At the close of the Middle Ages the States of modern Europe began to assume their present form, and in every case they were ruled by Monarchs who employed, not officials appointed for short terms and replacing one another by rotation, but men whom they retained permanently and who were skilled in the art of administration. The new Monarchies meant government by experts, and that was one of the chief secrets of their efficiency and predominence.

Turning to the history of China, the same thing is true. The statesmen of the different dynasties who accomplished great things were not those who entered officialdom for a short time but those who acquired experience through a long period of service. In so far as we can recall numerous such cases we need not go into further detail.

EXPERTS IN GREATER NEED TO-DAY

Experts are obviously more needed in modern governments than in the past. The habit of frequent changes of officials, which means administration by persons without special skill in the public duties they undertake, might work well in a small, primitive community, or even in a large country where there is no outside pressure. But in this age of ours, when all nations and all races are thrown together to struggle for existence, such changes and such lack of experts will surely lead to bad results. Both industrial and governmental affairs have to meet a high degree of competition and hence the need of experts of all kinds is constantly increasing. They have revolutionized some industries, they have made many governments efficient, and they are indispensable in many cases.

Europe has found this out long before others. They have also discovered that a great obstacle to the influence of experts, which undermines efficient administration, is what is called the spoil system of filling governmental posts, by which is meant that governmental posts are regarded as the prize of political or personal warfare which the winners can give to their helpers for political or personal services. The governmental posts corrupt politics and politics in turn corrupt the governmental posts. Consequently, the Western nations are consistently endeavouring to take the great masses of appointments out of politics and place them on a merit basis. In fact, in the West experts are now used in most phases of governmental work. Only a lawyer is appointed a judge or government attorney, only a physician is appointed a health officer, only an engineer is employed to do engineering, only experienced and practical men to run a railroad, only trained men to act as diplomatic and consular officers. In fact, the tendency is towards employing only experts for government service. All the Departments of the British Government have what is called permanent under-secretaries who are experts. The scientific departments and commissions at Washington are filled with men of the highest attainments who are retained in spite of political changes. It is well known that a vast benefit has been gained by taking so many places out of the field of political patronage and party spoil.[2]

To be specific, the influence of expert officials in municipal governments of Europe is especially self-evident. The chief magistrates of the cities in Germany, for example, are strictly permanent professional administrators, and the business of the cities is in the main conducted by them and the other permanent officials for whom municipal work is a life-

1.—Lowell, " Public Opinion and Popular Government" p. 268.
2.—Vide Lowell, " Public Opinion and Popular Government " p. 276.

long career. In France and England, the influence of experts is just as powerful although less apparent.

It can be generally admitted that the affairs of our cities are less well managed than those of American cities, and that the latter in turn are less well managed than those of European cities. This comparison is also true in many other branches of governmental activities. The underlying cause of the differences in the result of the administration of European, American and Chinese cities is not to be found in the difference of any outward form of organization, but in the fact that more affairs in American cities are conducted by inexperienced, temporary officers than in Europe, while our case is still worse than America.

Many people, with good reason, believe that we can learn much from European and American experience. There are still others who advocate wholesale imitations. But transplanted political institutions are likely to be barren, unless the roots are carried with them. There are said to be monkeys in Africa, who are more imitative than parrots, in that they copy faithfully the huts of men and then live on the outside of them instead of the inside. Political or other imitation is not free from this danger of copying the obvious, while failing to perceive the essential. To get better results, we must look for the real cause of things.

LACK OF EXPERTS IS CAUSE OF CHINA'S WEAKNESS.

One of the chief causes of China's weakness is the employment of men of general knowledge instead of experts in the government administration. The mandarin and the famous Expectant Taotai were deemed to be able to do everything, from the running of a railway and the negotiating of a treaty to the drilling of soldiers or the policing of a city, irrespective of what training they had before. When we have such men to face the foreign experts who know every corner of the game in making our treaties or in discussing a loan agreement, it is no wonder that we have lost much of our inherited privileges and now find ourselves tied down to all sorts of agreements, "promises" and "undertakings." When one examines some of our treaties and other kinds of agreements, one can not help feeling surprised by the absurdity of some of their stipulations, and wondering how they ever could have been made. We can not estimate how much we have suffered from the lack of experts in our service. The great wonder is that we have not done worse.

There are many reasons why we have not trained up experts. But the most important is that we seldom had men with special training to begin with, and that we shifted our officials too often.

Little improvement has been made in this respect. Not many more experts than before have been employed to do real constructive work; and the non-experts have been shifted and changed oftener than before, thus further reducing the chances of the men of "general education" to become familiar with the work of their offices. Since the revolution we have had no less than seven or eight changes of the Cabinet. Most of the Ministries and Departments have had equally as many changes and re-organizations. These changes are bad enough, but what has been worse is the fact that with each and every change or re-organization, wholesale changes of officers of the lower grades have often been made. It is reported that under one excuse or another, some new Ministers would discharge the men appointed by the previous Ministers and gradually get their own candidates to fill the vacated places. When these new Ministers went away, their successors would do the same. Indeed I have personally heard some petty officers say that what they get as pay was really not worth the fear and anxiety they had of being discharged. And it goes without saying that each of such changes meant a complete dislocation and deadlock of the working of the offices concerned.

We must not blame the Ministers for making the changes, for there is no system to lead them to do otherwise. There seem to be three reasons why there were so many changes of the subordinate posts. *Firstly*, if a new Minister is earnestly working for improvement, he has to change the men because they are in many cases incompetent; *secondly*, if he is not earnest he has also to change them in order to accommodate his own men or because some of the old men may be too good to suit him; and *thirdly*, there is the pressure brought to bear upon a new Minister by his colleagues, old friends, relatives, and others who had helped him in the past, all and each one of whom often would have more than one candidate for him to accommodate. Against such pressure, a Minister often might be helpless, in the absence of any system upon which he may depend to prevent irregularity in making appointments, even if he wishes to do the right thing, to say nothing if he is inclined to do otherwise. As a result, few of our offices have been held by men for any length of time. Every man is usually quite new to the administrative office he might fill and leaves it before he has time to learn much more than he knew when he came in. What is true in the Capital is equally true in the Provinces. Thus, one is on the one hand handicapped by being a new man unfamiliar with the work of his office and on the other hand by being prevented from settling down long enough to learn his business. When we add to such difficulties the constant anxiety which one feels in his heart of being shifted or dismissed, how can we expect good results? Under such circumstances no human being can effect any real improvement. When one is new to his work and at the same time does not feel secure in his position, it is but natural that he should either try to do no more than say new year phraseologies so as to "look wise" or make a fool of himself by trying to turn everything upside down and build castles in the air of which he can have but a novel conception.

The causes of such a state of affairs are too numerous to enumerate. One of the most important, perhaps, is the political and national changes which took place during the last three years. Another trouble seems to lie in the fact that there is a gap between the old and the new. The older people who have gained some experience in the old regime are becoming fewer every year. Moreover, very often the old experience does not fit a man to do business under modern conditions. On the other hand, the younger generation have not the necessary experience. Therefore the experienced men dislike to have the younger generation, or sometimes even are afraid to use them for fear that they might assist them to get the necessary experience and thereby assist themselves to be crowded out. Hence there results the gap which has led to many misunderstandings and made impossible that co-operation between the old and young, which is essential in our national life. For the young need the guidance of the old and the old need the energy of the young. The two are mutually dependent, in order to get good results.

The events of the last three years seem to show that China's "young party" went to one extreme and the "old party" is going to the other extreme. Such tendencies to gravitate toward extremes must be checked and the best of the two must be harmonized, before we can expect stability. And the real greatness of statesmen lies in their ability and in their readiness to face the situation squarely.

CHINA MUST HAVE MORE EXPERTS FROM NOW ON.

Such a state of affairs, bad as it is, might have been excusable in the past; but from now on, we must make a new start by bringing about harmony and by getting more experts. It must be pointed out that besides the former governmental affairs, which itself requires experts, the government is gradually but surely taking a large amount of commercial business into its own hands. Business is business, which must be managed as business in a business manner, and not as politics in a political fashion. There are business laws just as there are physical laws, the observance of which is imperative. Moreover, the worst enemy of productive business is politics, and experience has shown that the two must be separated in order to secure success. Unless we make this distinction at once, the disaster, which will slowly but surely come, will be unthinkable.

The so-called productive businesses, such as railways, tramways, mining, etc., undertaken by the government is financed largely with foreign money some of which is reported to be tainted with ulterior motives. As all productive businesses are, they may earn a profit or they may result in a loss, which difference depends, to a large extent, upon the manner in which the business is managed. To earn a profit is hard and uncertain, even with expert management, but to bring about a loss is easy and sure if we conduct our productive business in the same manner as we handle our governmental affairs. The chief reason why the China Merchants Steamship Company is so weak and why so many governmental undertakings such as paper-factories, weaving mills, etc., have failed is due to their having been mixed up with politics. Both present and past experience in our industrial life is so plain that this assertion does not need any explanation or citation of specific cases to establish its validity.

We are beginning to imitate certain foreign powers in adopting the paternal policy of owning all large industries, such as railways, telegraphs, waterworks, tramways, manufacturing enterprises, etc., but we seem to fail to recognize the great difficulties which the most successful governments have in handling such enterprises. We see their benefits, but ignore the efforts of the foreign governments to which are due the benefits. Guided by such faint ideas and lured by the delusion of enormous profits, we shall soon fall into an eternal abyss. To safeguard against this danger, we must begin right away to take proper precautions as did other countries in separating the management of such businesses from politics. Otherwise our productive enterprises will corrupt our politics and our politics will corrupt the productive enterprises. Once we get into such a dilemma, some sort of an international commission might be tempted to take over all such enterprises from our hands. But to separate productive enterprises from politics is a hard problem, for it is often found that the politicians are usually opposed to such a separation.

After effecting such a separation, then we should place as much of the work as possible in the hands of experts. But for the present, we have not enough experts. So besides employing real foreign experts, we must try to train up our own experts. To effect this we need to make the governmental and industrial posts more permanent and put everything on a merit basis. The head of a great industrial enterprise would not think of changing his subordinates every year or two. Whether honest or corrupt, whether generous or oppressive, he wants under him men who have proved themselves efficient for his purposes. A government is but an enterprise on a large scale and should be managed more or less in the same way. This is especially true when it takes up productive business. The public servants should be taken into the service impartially and kept in the service so long as they do their work properly When the higher officers are removed, the lower ones who have good records should be promoted to fill their places. In the absence of such a system of promotion most people would not care to begin in the lower offices and work their way up, although it is the only way to get proper experience and produce efficient administration. They can not be blamed for it, because it is almost a universal truth in China now that once one takes up a small job, however important and constructive it may be, and however faithfully he may work he can seldom have a chance to become known to the men higher up and get promoted regularly unless he becomes a protegée of some sort or to somebody. Consequently, we see all men striving to be "big men" and to hold high offices, thus leaving the real work undone. On account of the lack of permanency a man is tempted to try to make the most out of a position for himself as quickly as possible, for he feels certain that his days to hold the post are numbered. In order to expect improvement, we must remove these evils.

In turn when the officers are permanent, they will be prone, for the same reason, to retain their own subordinates, promoting them to higher places as they show ability. If the head is good he will retain good men; if bad, he will retain and promote men who will carry out his evil designs; but in any case, a corps of expert administrators will likely be

produced in every department. Once the public service becomes a long career, men will enter it while young and follow it through life. The service is not always good; it may become stagnant or rigid and its members negligent, oppressive or corrupt. But even in the worst case there will be a certain durability derived from the expert qualifications of the members.

Whether our Government will endure or not will depend upon its success in solving its problems, and among these, few are more important than the question of its capacity to train up the right kind of experts and to use and control them in the right way. We have tried to show the need of experts in our country. We have also suggested that in order to get experts the positions in the government service should be made more permanent so as to give the officials enough time to learn the work of their offices and thus become experts. But before we could effect the latter reform advantageously, we must, as we have slightly referred to before, have some effectual methods for the admittance of worthy and well qualified young men into the government service to begin with. Otherwise corrruption and favouritism will begin from the beginning and unworthy men will thus get in from the outset. Our proposed system of permanent service presupposes that the men who enjoy its protection should be worthy. If without the protection of any permanent service the unworthy wire-pullers can manage to get in, hold on to their posts and leave no room to the worthy men, they will make it impossible for others to secure appointment, once a system of permanent service is created. Nothing could be so damaging as such an abused application of the civil service system. Yet such a bad state of affairs is easy of creation in China where of late many people seem to have been trying to use the existence or absence of certain institutions in the West as an excuse for their own actions, without any regard to the spirit of such institutions.

MUST OPEN DOOR TO ALL.

What is most important is that the door of all sections of the government service, especially those of a productive nature, be open to all competitors on an equal basis so as to prevent such services being filled by men of certain "circles" or cliques, and at the same time to get well trained men as well as to provide a safety valve for the educated classes. This is one of the most essential measures to take, not only for the safety of the government, but the future of the nation, without which discontent is bound to grow to such an extent as to lead to serious disaster.

For thousands of years, the Chinese mind has been saturated with the idea that government honour and office are open to all who can pass the old system of examinations. One felt that it was his own ability and his forefather's good deeds that lead to influence; and so when one failed to secure such honour or office one would blame oneself or curse his bad luck instead of growling against the Government. People were thus not only encouraged to study hard, but to do good in order to appeal to the mercies of Heaven both for themselves and for their children in passing these examinations. The system acted as a sort of safety valve through which the danger of the anger of the people against failure to obtain government appointments or honor was let out. This indirect influence of the examinations must have been tremendous.

Since the abolition of that system, no substitute has been introduced. Schools and colleges with the help of Civil Service examinations, to a certain extent, have substituted this system in the West where the conditions are different, but they have been a failure here, so far as acting as the substitute of the old system of affording all citizens an equal opportunity to get honour and employment is concerned. In the first place, the entrance into the Government schools and colleges in many cases is not systematized. So favoritism and personal influence often have more to do than educational qualifications in enabling candidates to enter these institutions. This undesirable state of affairs is clearly shown by the fact, besides others, that a number of the government schools are filled with students from a certain locality or province. Such irregularity of admittance into the government institutions, together with the heavy cost of modern schools, closes the door of education to many ambitious and capable young men who would become useful under more favourable conditions. This undesirable state of affairs is bad enough, but this is not all. When the students graduate, again there is not any effective way whereby the Government may test and select the graduates for actual service. Consequently favoritism and "pull" again occupy the foremost ground in most cases.

The number of such graduates and returned students is increasing rapidly every year. Since Government service is not enough to give all of them employment many of these young men must be left out. As it is now, the only way by which they may get Government employment seems to be to get some influential friends to pull them in. Under such circumstances, where there is no way whereby all may have an equal chance to demonstrate their qualifications or to compete for employment, those who are left out naturally may complain against the Government. Moreover, human nature is the same the world over in that every man seems to think he is better than his neighbours. If he sees others get employment and honour and he is left out, he is unconsciously led to feel bad about it. The only way to appease him is to let him try the same test with others; and, if he fails, then he will have to blame bad luck instead of the Government. At any rate, in the absence of any effective system to select men on an equal basis, the Government opens itself to serious criticism which may be undeserved, and creates against itself an increasing number of enemies. Unless some preventive measure is taken this defect will develop rapidly and lead to disaster.

The lack of a system to enable all to compete for government honour and employment on an equal basis might have been permitted years ago, but in the present age, it is intolerable. The fact that the Government has adopted the so-called paternal policy of taking up various productive enterprises, such as railways, telegraphs, telephones, tramways, banking, mining, etc., makes it absolutely necessary that some effective system should be introduced so as to afford all citizens equal opportunities to obtain governmental appointments. This is imperative not only from the point of view of justice but from that of the Government both as owner of these industries and as the Government of the nation.

As intimated before, business must be managed by experts in a business like manner in order to attain success. To secure the services of experts, we must select worthy men to begin with, for in these services it is even easier than in other cases for the authorities to appoint men for selfish purposes. As it is now, the power to select men for such services is largely left in the hands of the directors, managers, and other officers who have influence, to send down "slips of names." What is bad is that no effective rules are laid down for their guidance in exercising their power. Some have tried examinations which were not always above suspicion, while others have not even tried examinations. In short the prevalent method by which men secure entry into such services seems to be to get some influential men to pull them in. Such a way of filling ordinary posts is bad enough even when the activities of the government are limited to purely governmental routine, but when such activities are extended to productive enterprises, the evil is far more serious. The Government will not only be depriving itself of the services of the best men, but will be turning these men into turbulent opponents. Furthermore, it will also be giving the opportunity to unscrupulous officials to use these services in nursing their followers so that they may count upon them to block the effort of the Government at critical moments, to say nothing of the disadvantages resulting from bad management.

Since I am a railway man, I may take the railways as a hypothetical example. Few people realize what the railway service means. In most modern countries it constitutes the largest single kind of enterprise besides that of agriculture. In India, the number of men employed by the railways is about 900,000. In the United States the number is twice as large. China, herself, even now must have some 10,000 or 15,000 railway servants and the number is bound to increase rapidly. By keeping these figures in mind, one can see how important it is that some effective means should be found for selecting the best men for each kind of occupation in such services. In the absence of effective measures to enable all to compete on an equal basis for employment in this service, what could be reasonably expected under ordinary circumstances would be that the authorities farm out good posts for their favorites. The posts thus become the prize of different parties, which is but natural. This would be not only an injustice to the men who have no influence or are outside of the different parties, but would make it difficult for the Government to make any progress, except that which pleases the "parties." Moreover, it would be extremely difficult to check fraud or incompetency. In fact the drawbacks would be too many to enumerate. It is said that Italy actually experienced this evil and her railways were by it brought to bankruptcy. Other countries have adopted means to prevent it, and we must do something effective if we want to make our railways a national enterprise managed by the best and independent men on a business basis. This is only a hypothetical illustration; yet hypothetical as it is, it is by no means impossible of happening.

Such discrimination as the above would be especially serious since in our age the demand of the people for just treatment is keener than ever, because the struggle for existence is fiercer. In fact to most of the young men who complain of unequal treatment it is not merely a question of honour but rather a question of making a living. In countries where there is plenty of employment it is not vital whether or not the Government open its door to all, for the reason that the people can make as good a living elsewhere. But in China, the great majority of the student class, who are said to be the hardest to please (at least at the present) have to look to the Government for employment; and when they see or feel men less able than themselves secure appointments through favouritism and they are deprived of a fair chance to compete, it is but natural that they harbour complaints against the Government. This is especially urgent, since governmental enterprises will constitute a large part of employment in China for educated young men. Unless we find some effective means to guarantee that the doors to those government services shall be kept open to all on an equal basis we can not expect tranquillity.

The real meaning behind all the recent troubles and the labour and other "class" movements is the desire of mankind to get an equal chance for a living. In other words, we must provide a safety valve for our teeming population; and no other valve is safer than to give all men an equal opportunity to get employment. The Government cannot do better than to adopt a system through which it may say to the people with justice, "Prepare yourselves. The Government will give you a fair test, and the best will succeed."

COMPETITIVE EXAMINATIONS NEEDED

One of the means which, I believe, will be of great help, is to adopt competitive examinations for all lower grades of the Government service, and to fill all the upper grades within well defined limits by further examination and promotion. One of our recent but most undesirable characteristics which is entirely out of harmony with the teachings of our Sages and which has done much harm to our country is our blind and violent change of attitude towards foreign institutions. It was not long ago that we were so self-conceited that we thought we were the only civilized nation in the World and that all others were barbarians. It was the fashion of the time to do everything to prevent foreign institutions or ideas from entering our soil. But this state of affairs did not last long. A few years later our country was so affected by external influences that the former blind prejudice was soon changed from one extreme to another with no real reason, when people seemed to believe just as blindly as before that everything foreign was good and all things Chinese were

bad. Lately the whole country has been so carried off by pro-foreign ideas that during this transitional period we have cast away many invaluable traditions which had been handed down to us by our forefathers, and picked up numerous foreign "trash" which enlightened foreigners themselves are trying to get rid of. What is worse is the fact, that in many cases not only have we picked up bad foreign things but have also so misinterpreted and misunderstood good foreign institutions that even those which have proven to be beneficial in foreign countries have been shown to be harmful to us. This violent wave is so prevalent and unmistakable that observers cannot help noticing it, and many of our foreign friends who can see us clearly have been lamenting over our plight.

It is too long a story to state what bad foreign institutions we have adopted and what good Chinese institutions we have cast away. Such an enumeration may not help us. Besides urging upon all to be more discriminating in introducing foreign institutions and to be more careful in casting away those of our own, we wish only to call special attention to one institution which we cast away and which we need to restore and *improve*. And this particular institution is the old system of competitive examinations.

It is recorded that Shun the Great, about B.C. 2200, used to examine his officers periodically. In so far as writing had but been newly invented, it is impossible to tell in what subjects he examined them. In the Chou Dynasty, about B.C. 1100, the candidates for office were known to be examined in the so-called "six arts,"—li, yao, she, yu, shu and shu,—that is, etiquette, music, archery, horsemanship, writing and arithmetic. In the Han Dynasty, the subjects were extended. Character and past records of the candidates were taken into consideration. Therefore, men who had acquired a reputation of being filial to their parents and honest in their conduct, were to be recommended to be examined in such subjects as law, military affairs, agriculture, finance, communications, etc., in addition to the six arts.

It was about A.D. 600 that Taitsung of the Tang Dynasty greatly amplified the plan and instituted the system of preparing and selecting civilians by means of study and degrees, founding this system on the fact that education had always been esteemed.

At first the Manchu Monarchs were not favourably disposed to the system of examinations and frowned upon the literary hierarchy who claimed all honours as their right; but the next generation saw the advantages and necessity of the *concours* in preserving its own power.

Eventually this system of examinations became the only part of our social invention not to be parallelled in one or other of the great western monarchies of past or present times. Considered from the point of its machinery and the effect of its application, this system stands as a lasting testimony to the ingenuity of its founders. Of all the instruments of government which our forefathers have invented, developed and handed down to us, the old system of examinations ranks among the best. The underlying idea, the rules and regulations governing its working, the method of procedure and the precautions against injustice, all these unique features of that system have been so perfected that it is one of the great monuments of our civilization.

What it has done indirectly for China, perhaps, is much more than what it has done directly. It is believed with good reason that it was that system of examinations that had held China together as a unified whole, especially, in the matter of written language and literature—invaluable and unique assets of our country. Besides other benefits the unifying influence which the periodical pilgrimages of the educated class to the Capitals of the Provinces and that of the nation, as required by the examinations, must have been tremendous. It is recognised to be the foundation upon which has been built China's hereditary democracy and the institution which has prevented the formation of arbitrary castes and classes, the absence of which is another of our most invaluable assets. Though unconsciously, it certainly helped to break down the barriers between the different classes of the people, the existence of which did so much harm to India, by opening the door of both the highest honour and real power of the nation to all people.

It helped to make China a comparatively peaceful country through all these centuries by offering an honourable career to the most ambitious, talented, or turbulent spirits in the country, which demanded all their powers; and by the time they entered upon office, their aspirations and powers became drilled and modelled into useful service and were ever devoted to the maintenance of the system they might otherwise have wrecked.

It helped to secure good officials, by limiting favouritism. China was the only country where one must possess a certain amount of general knowledge before he could take up office. It was the disregard and abuse of this system by selling office that brought about weakness. "The discipline of mind and memory which these examinations draw out furnishes a grade of intellect which only needs the friction and experience of public life to make statesmen out of scholars and goes far to account for the influence of the Chinese in Asia."[1]

It operated as a counterpoise to the power of an absolute monarchy. Without it, the important offices would have been held by hereditary nobles or unscrupulous officials and the minor offices farmed out by thousands of imperial favourites, or members of "cliques" With it a man of talent might raise himself from the humblest ranks to the dignity of viceroy or premier. The system, therefore, introduced a popular element into the Government—a check on the prerogative of the Emperor or officials as to the appointment of officers—and served as a kind of constitution to the people prescribing the conditions on which they could obtain a share in the Government administration.

1.—Williams, "Middle Kingdom," Vol. I. p. 556.

In short it is recognized as one of the most stable corner stones of China's civilization which helped to make China a unified country with a homogeneous people. Its abolition during the Ching Dynasty, before finding a suitable substitute, has been regarded, with much reason, as the principal cause of the downfall of that Dynasty.[1]

This system has done much in spite of the fact that the subjects studied in preparation for the trials contained little that was practical.

WHAT FOREIGNERS SAID.

It will be well to see what some foreign observers have said about this institution. We, therefore, quote below the statements of a number of the best foreign authors who have expressed any opinion on this subject.[2]

In speaking of the system of Chinese education and competitive examinations, Williams said: "It is remarkable how much it really has done to form, elevate, and consolidate their national institutions."[3]

"There can be no doubt as to the important and beneficial results it has accomplished, with all its defects, in perpetuating and strengthening the system of Government and securing to the people a more equitable and vigorous body of magistrates than they could get in any other way."[4]

"Educated men form the only aristocracy in the land. On the whole, it may safely be asserted that these examinations have done more to maintain the stability and explain the continuance of the Chinese Government than any other single cause."[5]

"It is the only one of their (Chinese) inventions which is, perhaps, worth preserving, and has not been adopted by other countries and carried to greater perfection than they were equal to."[6]

Dr. Martin calls the system of competitive examinations "the most admirable institution of the Chinese Empire," and "the masterpiece in that skillful mechanism, the balance wheel that regulates the working of the wonderful machinery (civilization)."[7]

"It leads to the selection of the best talents for the service of the public; but beyond this, its primary object, it exercises a profound influence upon the education of the people and the stability of the Government. It is all, in fact, that China has to show in the way of an educational system."[8]

"Their system of competitive examinations has, indeed, served the Chinese well. It is the brightest spot in the whole administration, being absolutely above suspicion, such as attaches to other departments of state."[9]

"But the value of the competitive examination system as an enduring source of natural cohesion and stability can scarcely be exaggerated."[10]

"The Chinese have been wise in thus giving the people a share in their own Government, nor is it in the way of pandering to democracy, but it is bestowed as a right on those who are fitted for it by an education. China has also by this admirable plan—admirable, taken as a whole, alike in its conception, development, and working—prevented herself from being overburdened by an aristocracy, with all its concomitant evils, which, had it existed, would, as in most European countries, have monopolized all that was worth having in Government."[11]

"Yet, if there is one feature in Chinese polity that has been admired in Europe with unqualified approval, it is the public examinations through which every Chinese must pass if he would enter official life or would obtain a degree giving him the cachet of an educated gentleman. These precautions apart, the examinations fulfil the great boast of democracy, by providing an opening for talent in every grade of society, and have acted as a stimulus to education during at least thirteen centuries."[12]

"The system has been modified and improved during successive ages and has become one of the most remarkable and powerful organizations which this World has ever known."[13]

"In every case the institution of Public Service Examinations (which have long been strictly competitive) is the cause of the continued duration of the Chinese nation; it is that which preserves the other causes and gives efficacy to other operations."[14]

BAD POINTS OF THE SYSTEM.

Every one knows there are many defects and malversations in the system, some of which are inherited, but most of them rather prove the badness of the material than of the system and its harmonious working. What was bad was that the examinations had been applied to the test of classics and poetry alone, which fact tended to contract the mind to look upon such classics as containing all that was worth anything in the World. Liberal education for solving the problems of men was discouraged. The worst part was that the system influenced men to regard education for the narrow officialdom instead of for preparing men for practical, every

1.—J. O. P. Bland, "Recent Events and Present Policies in China," p. 75.
2.—These authors are selected from Dr. Morrison's Library.
3.—Williams, "Middle Kingdom," Vol. I., p. 521.
4.—Williams, "Middle Kingdom," Vol. I., p. 565.
5.—Williams, "Middle Kingdom," Vol. I., p. 565.
6.—Williams, "Middle Kingdom," Vol. I., p, 565.
7.—W. A. P. Martin, Hanlin Papers, 1880, p. 53.
8.—W. A. P. Martin, Hanlin Papers, 1880, p. 65.
9.—H. A. Giles, "The Civilization of China," 1911, p. 112
10.—J. O. P. Bland, "Recent Events and Present Policies in China," p. 75
11.—J. D. Ball, "Things Chinese," 1903, p. 268.
12.—R. S. Gungery, "China Present and Past," p. 545.
13.—John L. Nevius, "China and the Chinese," 1869, p. 65.
14.—Meadows, "The Chinese and their Rebellions."

day life. This attitude in turn caused industrial pursuits to be looked upon with disdain, as unworthy of a scholar.

Besides exterior imperfections, the system itself had many short-comings. For instance, the testing by examinations, the fitness of the candidate for the duties he will be called upon to perform, although it is easy to measure in the case of technical or routine work, it is very difficult to ascertain when initiative, resourcefulness, good judgment and willingness to assume responsibility are in question. These are personal qualities which a written examination reaches but faintly.

But such personal qualities can soon be found out by the officers in charge of the departments of work. What is important is to find out the special or academic preparations and general capacity of men for the work of which they are still ignorant. If we get promising young men by fair examinations so as to be sure that they have the right education and then promote them as they show talent, we shall have no trouble in training up experts in all branches of the service. The average young man who can pass a properly outlined examination in literature and the useful sciences can generally be expected to "make good" when we open the door and allow him to make his own way up the steps of the service by showing his usefulness after he has entered.

This is the experience everywhere. In one profession after another the Western people have learned to train young men carefully in the theory and practice of their work, by taking them young and educating them for it as a distinct career. Sixty years ago, for instance, there were very few schools of applied science in the World, and the Western peoples were limiting their studies to Latin and Greek as we were studying classics, but now such schools are everywhere in the West, and they can hardly turn out students fast enough to supply the demand. In great private industries, employers do not seek mainly for persons already trained, but take promising young men with a proper education, promoting them as they show talent. This is the actual practice of the British Government, which has proven a great success. In fact the experience of the East Indian and Dutch Colonial offices has shown the advantages of a system which does not attempt to measure immediate fitness for the work to be done, but which merely tests the general education and ability of young men who are expected to make their own way up the steps of the service by their usefulness after they get in.

Since more government functions from now on will be of a scientific rather than theoretical nature, some impartial system of examinations will be more useful and more effective than formerly.

WHAT SHOULD BE DONE WITH THE SYSTEM.

But we must emphasize that what we advocate is only the restoration of the system of examinations itself, with some improvements to suit present conditions; but by no means the subject matters, such as eight legged essays or eight toned poetry, which were examined formerly. A system of examinations is complete by itself and should not be mixed up with the subjects examined, or the abusive uses made of the system. It resembles a utensil which can hold dirt or keep gold, it is like a ruler which can measure useless and useful things alike. What we want is to make use of the vessel or the ruler because we believe it is useful, not necessarily for measuring the old things, such as classics and poetry, but for useful purposes, such as for testing engineering, medicine, physics, chemistry, economics or law. And we may well point out here that the reason why the old system of examinations was discarded was not primarily because of the faults which were found in the system itself but rather because of the abusive use of the system in examining useless subjects. In other words, we have thrown away a useful and valuable vessel, because in it was held obnoxious substances; we have tried to break the ruler because it was used for measuring useless material. What we propose now is to clean the vessel of its dirt and discontinue abusing the ruler so that they may be again used for proper purposes.

As stated before, the system itself represents such a perfect piece of organization for the execution of the work for which it was adopted, that it must have taken the best mind of centuries to have perfected it to such an extent. Its methods of admitting candidates, its means of copying and re-copying the examination papers by independent clerks for guarding against favouritism, its other means for preventing fraud, all of which like the solid material of our old structures, are still upright and strong, in spite of age and neglect, and, with a little improvement, can easily be used for modern purposes.

We say improvement, for we should not simply make servile imitations either of our forefathers or foreigners. We need to adapt things to our use. We want to make improvements and purge the system of its defects and render it more productive of good results and more serviceable for present day purposes. The system as we found it in the latter years of the Ching Dynasty was not the system as originally invented. Our forefathers had already made many changes. So we should also do the same in the right direction. Indeed, no system is perfect. There are bound to be loop-holes and drawbacks. What is important is to do the best we can, and not to be discouraged by shortcomings. What is needed in China are builders and improvers and not destroyers.

But before we decide to adopt any system of examinations, we must make a thorough study of the problem first, so as to be able to improve the old system to meet our present day requirements. In so far as this is a fundamental question which has an immediate and lasting effect upon our government and our nation we must not go at matters haphazardly. In fact, we should leave no stone unturned in order to find out what was good as well as what was bad in the old system and also to ascertain what should be done to meet modern conditions. The result of the Civil Service Systems of England, France, America and Prussia have been uniformly beneficial and proven to be most instrumental in improving the efficiency of their government administration. Such systems have been largely based upon competitive examinations and in so far as in all these countries the result has been uniform,—a conviction that such a system of competitive examinations, so far as it can be employed, gives the best method of ascertaining the qualifications of candidates for government employment, we should extend our inquiry into these countries. To secure as adviser the services of a faithful Westerner who has plenty of practical experience in the administration of the civil service, may help matters a good deal. Since they have copied the idea from us and they have tried the system for modern purposes, the changes which they may have made in our old system should prove of great value to us for our present purposes.

The above are but some brief suggestions. In order to work the details out for putting these suggestions into effect, more careful study should be made. Experience both in our country and elsewhere seems to show that a workable commission consisting of learned, honest and practical men should be appointed to inquire into and report on the matter before final steps may be taken.

By reading this paper some may call me radical, others may call me reactionary, while still others may judge me in a still different light. Whatever the judgment may be, it is my conviction that in order to improve the government service, experts must be trained up and employed under proper control, offices must be made more permanent, government employment must be open to all on an equal basis, selection must be made by merit. Before making these reforms, effective and impartial examinations must be held; and to insure that the examinations will be effective and impartial, our old system of competitive examinations and the Civil Service system of other countries will serve as a good basis to work out some more perfect and practical scheme. I wish only to further emphasize that in seeking to solve such a fundamental problem, we must take long views, and not allow ourselves to be overwhelmed by the clamor, complaint or enthusiasm of the moment in which we live.

THE CHINESE TELEGRAPH ADMINISTRATION'S WIRELESS TELEGRAPH STATIONS

The Wireless Coast Stations at Woosung and Canton, completed for working last summer, have now started regular service. Similar stations at Foochow and Hankow will be completed within a few months. The Woosung and Canton stations will be open for general public correspondence with ships at sea on and after the 1st of January, 1915. A typhoon-warning service, eventually also a press service, will be organized and inaugurated as soon as the necessary arrangements can be completed.

The Coast stations are all of the same construction, and the oscillating power in the antenna radiating the waves, by means of which messages are exchanged, is 5 kilowatt (about six and a-half H.P.) with a current of 32-38 Amperes. As the stations are fitted out each with two masts of a height of 200 feet this antenna power gives the stations a range of 700 nautical miles by day and at least 1,300 nautical miles by night, and they are thus able to exchange messages with one another and with all ships in Chinese waters.

The stations are fitted out with a 28 H. P. Benzine-Motor driving a dynamo and supplying the necessary current for charging an accumulator-battery from which the current is then taken for driving the transmitting machinery. A "Converter" run by this battery will supply an alternating current of 500 cycles per second, which is stepped up to some 10-12,000 Volts and used for charging the large condensors producing the electric oscillations and waves. The frequency of the oscillations being changed according to the wave-length can be varied between 100,000 and 500,000 per second and thus produces waves with lengths between 3,000 and 600 metres. The sparking in the spark-discharger takes place with a frequency of 1,000 per second, whereby is obtained that the signals are received by other stations as a fine musical tone that will cut through the so called "statics" or electric disturbances in the atmosphere, even when these are considerably stronger than the waves sent out by the stations. The receivers of all the stations can pick up waves of all lengths between 300 and 4,000 metres, and will transform the received waves into an audible sound heard by the operator in a head-gear telephone.

The stations are manned by a Chinese staff educated by foreign experts in the Peking College of Communications. The Woosung Station will be open for day-and-night service, and the Canton station will be open from 8. a.m. to 10. p.m. The stations are supervised by managers with 6-8 years' practical experience in wireless work, and should lend themselves to a satisfactory service as long as no interference is experienced from foreign men-of-war in Chinese waters and foreign wireless stations illegally established on Chinese territory.

OPTIMISTIC REPORT ON CHINA'S INTERNAL CONDITIONS.

American Association Criticises Japan in Manchuria.

China's financial condition was declared to be better than ever before and the government of Yuan Shih-k'ai was given full credit for having brought this state of affairs about in the report of the American Association for China read at its recent annual meeting in Shanghai.

President W. S. Emens presided at the meeting which was largely attended. The report of finances of the Association made by Mr. J. W. Gallagher, Hon. Treasurer, was approved as was also the report of the Executive Committee for 1914 in which various matters regarding conditions in China with especial reference to American trade were thoroughly discussed. Several recommendations were made and among them one that the new Commercial Attache be stationed in Shanghai rather than in Peking.

Election of a new Executive Committee was then held and resulted in the following being chosen, the first six being re-elected: Messrs. S. Fessenden, W. T. Findley, J. W. Gallagher, C. S. F. Lincoln, W. H. Lunt, W. A. Reed, C. C. Baldwin, J. J. Connell, O. H. Ritter, J. C Shengle and James B. Davies. The election of officers was as follows: President, W. A. Reed; Vice-President O. H. Ritter; Secretary, James B. Davies and Hon. Treasurer, J. W. Gallagher.

The report of the outgoing committee is in part as follows:

Your Committee has the honor to present the following report for the year 1914.

The Committee which you elected at the last annual meeting has served throughout the year with but one change in its personnel. Mr. W. H. Dietrich upon leaving Shanghai in September was compelled to resign, and his place on the Committee and as Treasurer was filled at the Committee's invitation, by Mr. J. W. Gallagher.

We have to record with deep regret, the death this month of Hon W. W. Rockhill, formerly U. S. Minister at Peking. His valuable services in that important office and his aid to our Association will long be remembered by us. Mr. Rockhill had been an honorary member of the Association for nearly fourteen years—since April, 1901.

We have added five new members to our resident membership during the year but the Committee feels that in our growing American community this represents but a small fraction of those who might join if a little personal solicitation were made.

Our present membership stands at:—Honorary, 2; Resident, 102; Non-Resident, 73.

Your Committee has been actively engaged during the year in efforts to bring before the Department of State and Congress the desirability and urgency of purchasing the site now occupied by the Consulate, Court and Post Office. In these efforts we have had the valuable assistance of our Consul General. We learned that everything possible was done at Washington to secure favorable action when the Appropriation Bill for the Diplomatic and Consular Service was before Congress. In the form in which this bill passed the House there was no provision made for Consular premises at Shanghai, but when it was reported to the Senate by the Committee on Appropriations it contained a Senate Amendment appropriating an amount for the acquisition of Consular premises at Shanghai. The Senate, however, struck out a number of appropriations which the House Bill carried, among others the acquisition of Embassy premises at Mexico City, Tokio and Berne, Switzerland. When the Bill finally got into Conference, a compromise was reached by which the appropriations for the Embassy premises of Mexico City and Tokio were adopted and the appropriations for Berne and Shanghai were abandoned.

Further efforts have since been made by your Committee and it is hoped that the present Congress will have passed the necessary appropriation for Shanghai before its adjournment at the end of what must necessarily be a comparatively short session.

During the year under review there has been very little encouragement for the American business man in China. So far as China is concerned a much more optimistic view of her progress and present state in finance and governmental activities must be taken, than could have been held a year ago. Then the country was just recovering from a revolution and the defeated rebels were believed to be planning another outbreak. Owing to the large stocks of goods held at all of the treaty ports the movement of which was rendered impossible by the disturbed state of the country and the inability of the Chinese to finance purchases, commerce had come almost to a standstill.

This condition continued almost until the outbreak of the war in Europe, at the beginning of August.

At first it was expected that the war would bring about the stoppage of shipments to China. This would have been to the advantage of the merchant so far as the clearing of his stock was concerned. There has eben however but little interruption in the traffic between American and British ports and China. As a result of the war the export of China produce came temporarily to a standstill. This situation has eased somewhat and some exports are going out in fair amounts but in some instances at quite a reduction from normal prices. The export of Chinese produce to the United States is a subject which at the moment presents new and interesting features created by the war in Europe, which has temporarily at least closed important markets, and the opening of the Panama Canal.

IMPROVED STATE OF CHINA.

Turning to China, we find a much better state of affairs. The Salt Gabelle of which so many were dubious, has met not only the interest charges against it but has returned an excess of several millions which can be applied to meet deficits in other funds, due to the partial stoppage of commerce. Purely governmental finance has also shown great improvement and the provinces are now contributing to the central government in steadily increasing amounts, so that the time is in sight when China's finances will be on a footing where no further loans will be necessary for administrative purposes. Not only has the Government been able to effect considerable economy in its own inner circles, but there has been improvement made in the Provincial Administrations. The relations between the Central Government and the provinces are gradually being adjusted.

Yuan Shih-k'ai has proved his ability and it is now appearing that the councilors surrounding him are men who have the welfare of their country and people at heart and are doing everything possible to promote the economic and social welfare of the country. Therefore it would not seem to be beyond the realm of probability that unless outside influences disturb China, her advance in all material lines is assured. This has a most important bearing on the question of continuance of business as those who have passed through the depression caused by the Revolution and the late rebellion will admit, and its influence on the future expansion of business is no less great as the purchasing power of the people greatly increases in every succeeding year of peace.

The situation for increase of trade therefore is satisfactory, but as for the increase of the trade of the United States—that is another matter. That the Government in Washington is taking a serious view of foreign trade is evidenced by the recent appointment of commercial attaches, including one to China, Mr. Julian H. Arnold, for many years in the consular service. The outcry against "dollar diplomacy" started in the Roosevelt administration. It was orginally directed against those who were alleged to be trying to grasp the trade of various South and Central American republics, by securing control of their resources through loans on advantageous terms, with the connivance of corrupt officials of the weaker countries and it seems to have been continued early in the present Administration not only to include business of that nature but to apply to merchants like ourselves whose interests and efforts are for a perfectly legitimate expansion of American trade.

This was shown in the statement of one of the diplomatic officials now in the Far East who said that the American business man must stand on his own feet and not expect the Government to go around the world waving a big stick whenever an American dollar was in danger. This statement was a reflection of the general attitude in Washington, but that view has been largely modified by the necessity for commercial expansion and the recognition of the fact that the prosperity of our people is in a large measure dependent upon the activity of the American merchant in foreign lands.

Therefore the appointment of Commercial Attaches is most encouraging as it gives the man in foreign lands a court of first instance to which he can present any difficulties arising with a possibility of having them heard and intelligently reported on to Washington, whereas direct appeals or those made through houses at home are regarded askance, as being prejudiced with self-interest. But the location of this attache in Peking we believe is a serious mistake. Shanghai is the proper place, for here the bulk of the business of China is done, and not at Peking. The commercial attache should be here and immediately accessible to the merchants in whose interests he is working. The value of personal contact cannot be over-estimated by the merchant.

JAPAN AND THE CLOSED DOOR

Turning now from trade in general to some particular considerations—what is the outlook? American cottons formerly held a premier position in Manchuria. Under Russian occupation, every nation stood on an equal footing in Manchuria. The same duties and charges were assessed against all and facilities for distributing goods and doing business in general were satisfactory. Now it is all changed. Under Japanese administration, no chance to advance its own trade is overlooked and to competitors the

means taken appear to be a departure from fair trading. In fact, they constitute a most serious violation of the open door principle on which the diplomacy of the United States in China is based. Japanese competition takes the form of a system of rebates not only in freight and steamer rates, but in remission of duties and charges which are assessed against all other nations. In addition to this many forms of petty annoyances have been worked out for the non-Japanese trader, and the imitation of established trade-marks is common.

Now that the Japanese are in Shantung, not the mere foothold that the Germans held at Tsingtau, but with an apparent determination to dominate the Province, the same tactics may be expected, since it would be exactly in line with the course employed in Korea and Manchuria. With Dalny on the northern promontory and Tsingtau on the Southern, Japan has secured a potential control of the trade of North China from the Russian frontier to the Yangtsze, upon whose valley her traders have long cast covetous eyes. In this connection it will become apparent that not only ourselves, but other nationalities, face a loss of trade.

In iron and steel products conditions are on a different basis but scarcely less disadvantageous to the American. Here also the open door is largely a myth for even with open bidding on railway materials, rails and rolling stock, bridges and the like, the specifications are such as to give European competitors an immense advantage. Unfortunately there is no international standard.

The policy of the United States government in discouraging the investment of American capital in Chinese railways and in loans to the Republic has been detrimental to our merchants, but as the administration gains a clearer view of the situation in China and begins to recognize the things that must be done if the United States is to share in this vast trade area, there are possibilities of some modifications of this policy which is believed to have been put forth without sufficient investigation and, at that, on sentimental grounds. This Association should use every means in its power to awaken the Government in Washington through whatever means it can find, to the necessity for a more vigorous policy in China to secure for us and to hold open when secured as liberal advantages for the extension of our trade as are now enjoyed by other nationalities.

A potent element in securing the sales of their product in foreign countries that is often overlooked by the manufacturer at home is the placing of his agencies wherever possible in the hands of Americans. As it is now, some products that might be enjoying a wide field are now being restricted by being in the hands of those who—other considerations being equal—naturally prefer to promote sales for their own nationals. Efforts to bring this home to the United States manufacturer should be made, as he stands a chance of having his product blanketed by the agency being in the hands of one who holds it merely to prevent competition with goods made by one of his own nationality.

America's work for China is now being extended in two widely separated fields. One is in the development of the petroleum deposits in Shensi, and the other the Hwai River conservancy project. In the former, the Standard Oil Company has already begun drilling and the progress of the work whose successful conclusion means so much for China, is being watched with keenest interest. If successful, the industrial problems of China will be nearer a solution than ever before and the immense stimulus which cheap and easily transported fuel always gives to manufacturing, should bring about an immense increase in every line of industry.

Regarding the Hwai River project, this is a plan to reclaim an area of land variously estimated at from 1,500 to 3,000 square miles (the latter estimate being that of the Shanghai Engineering Society) of land now worthless and to render immune from floods a further vast tract said to contain upwards of 17,000 square miles. The report of Colonel William L. Sibert, sent out to determine the feasibility of the project, is now in the hands of the Red Cross Society. Colonel Sibert refused to state his findings while in Shanghai, but as his anxiety seemed to those who questioned him, rather regarding the funds than the engineering difficulties, it is probable that the project will be put through.

Triangle Mesh Wire Concrete Reinforcement

Since the introduction of Triangle Mesh Wire reinforcement into the Far East by the United States Steel Products Company, its use in concrete construction has become so widespread that the company now carries large stocks in hand at Shanghai, Hongkong and Dalny, from which branches immediate shipments can be made. The popularity of this material is due to its great convenience as it comes in long rolls and is especially adaptable to the reinforcement of floors and the construction of columns, its hinge joint construction making it peculiarly well fitted for the latter service as it can be folded into column shape without bending the wires.

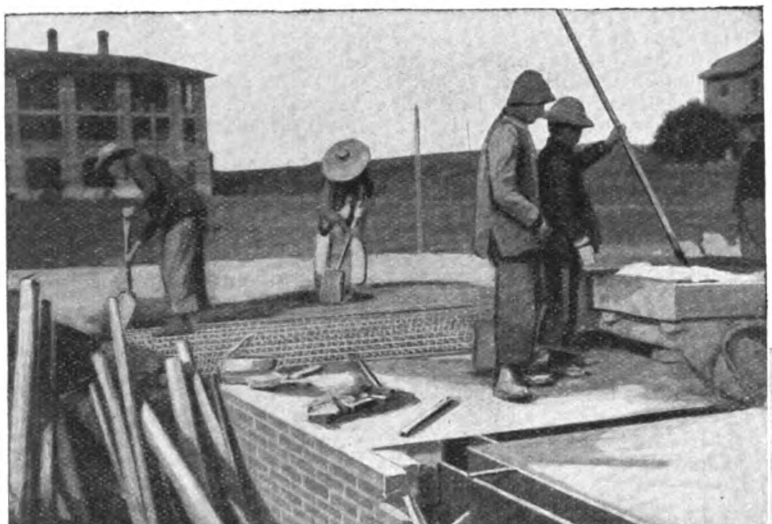
Triangle Mesh Wire Concrete Reinforcement is manufactured of hard, cold, drawn steel wire with a tensile strength of 85,000 pounds per square inch, and an average elastic limit of 50,000 pounds per square inch, possessing from 25 to 60 per cent. greater tensile strength than any hot rolled products of a similar area, such as bars, expanded metal, etc., there being no welds in any part of the fabric; the maximum strength of the material is conserved by the process of drawing and the possibility of flaws is entirely eliminated. Furthermore, it is of a truss form of construction, which in providing one of the best possible mechanical and adhesive bonds in the concrete, reinforces in every direction. Unlike any other form of mesh the cross wires assist the tension carrying longitudinal members, increasing the effective sectional area, enabling a lighter material to be used for the same resistance, as well as effecting a more equal distribution of the stresses. Being of hinge joint construction, the fabric is flexible and may be folded on any longitudinal member without bending the cross wires, consequently can be made to assume various conformations without producing any initial strain. The difficulty of maintaining equal spacing of bars, involving considerable labor, is entirely avoided, as in triangle mesh the cross wires accomplish this without labor and with perfect exactitude. Supplying it in continuous rolls of 150 feet, 200 feet and 600 feet long, no material whatever is wasted by longitudinal laps, thus effecting considerable economy, and it can be laid by unskilled labor, which is not true of other styles of reinforcement.

One of the latest uses of Triangle Mesh Wire is that of reinforcement for concrete roadways. The Calcutta Corporation, after an exhaustive series of experiments with all classes of paving material is now laying many of its roads in concrete with this form of reinforcement. By the use of Triangle Wire Mesh, the road engineers have succeeded in overcoming certain difficulties that were found in roads made of concrete without reinforcement.

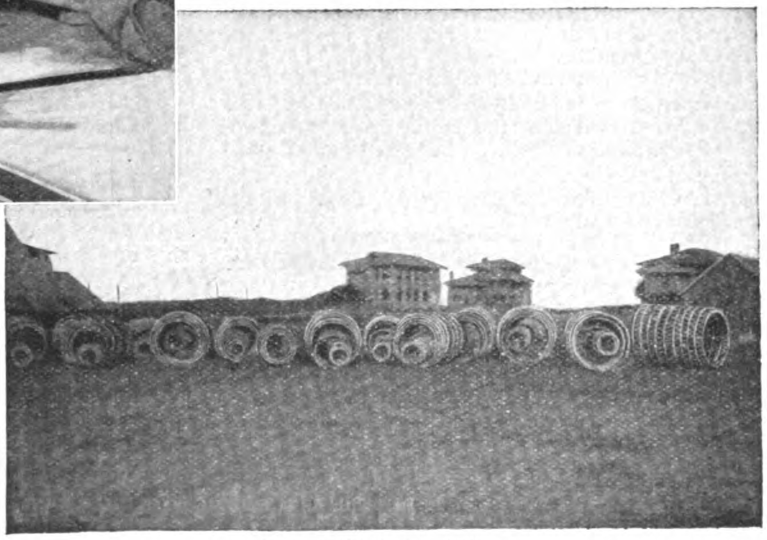
Architects and builders in the Far East and in India are using this Triangle Mesh Wire in almost all of the latest buildings, among which may be mentioned the Canton Christian College, the Hongkong Hotel, the Chinese Custom House of Honan Province, the main station building of the Burmese Railways at Rangoon and the Robinson and Mundy Building in the last named city.

The ease with which Triangle Mesh is put into place, requiring little skill or experience on the part of the laborer, is an especially attractive feature in the East where expert workmen in reinforced concrete are few and far between.

Architects and builders are requested to write the company setting forth any particular requirements of contemplated construction work, whereupon the company's experts will advise them as to the proper material.

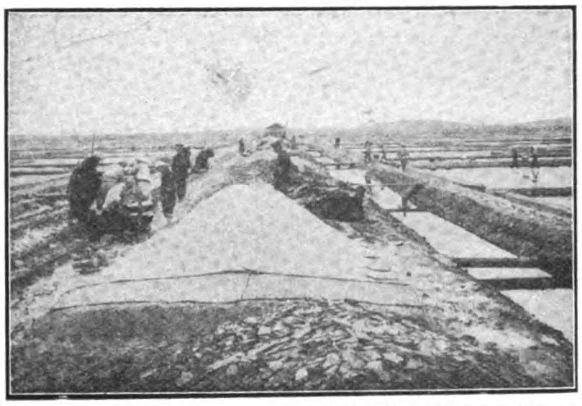


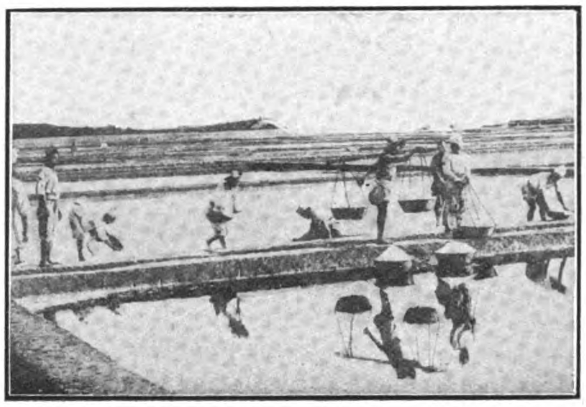
Canton Christian College
Laying Floor Slab, Faculty House, with Triangle Mesh Concrete Reinforcement



Canton Christian College
Showing Rolls of Triangle Mesh Concrete Reinforcement

SHANTUNG SALT





A Typical Chinese Coastal Salt Marsh and Evaporating Bed.

In the "Age of Wars," Shantung was designated under the appellation of Ch'i when the Salt Administration was for the first time promulgated by Kuan Chung, the famous Chancellor of the Province. In the Tsing Dynasty, it was placed under the jurisdiction of Changlu Salt Commissioner, and remained in that condition until the earlier stage of the Taokuang Era, it being then allowed to manage the administration independently.

The district wherein the manufacture of salt is extensively going on in the Province is the region along the mouth of the Yellow River as well as that around the Kiaochou Bay, Yungfu, Tengning, Wangkang, Kuantai, Hsiwei, Fukuo, Shihho, Yungli and Taowei being the most noted places for the production of salt. Besides, there are salt lakes at Tsaochow, Tungchang, Tsining and Tsinan.

Despite stringent measures adopted by the authorities, the local people were in the habit of unlawfully manufacturing salt from ancient days. The illegal practice has become so general among them since the establishment of the Republic that at Tungchang alone upward of two million piculs of salt is privately manufactured annually.

The jurisdiction of Shantung Government Salt District comprises the whole of the Province, Hsuchow in Kiangsu, Hsiuchow and Woyang in Anhui, and Kueitehfu in Honan. During 1912 23,700,000 piculs of salt were manufactured in Shantung (in view of unlawful production of salt, the actual amount of consumption is estimated at 2-3 of the above figure) while Hsuchow forwarded nearly 800,000 piculs, Hsiuchow and Woyang about 320,000 piculs, and Kueitehfu about 800,000. It is forbidden to ship the output to any district under the jurisdiction of other provincial authorities, unless instructed by the Financial Department.

The rules and regulations formed by the Government to supervise and control the manufacture of salt were strict and complicated. But the illegal practice having grown so rampant among the local people since the advent of the Republican system, the sale of Government salt was reduced to such a degree that many legitimate salt merchants were forced to close their stores, their fortune being wrecked by the unlawful practice of these dishonest salt producers. This state of affairs made the government take steps and institute a reform.

The innovation provides for the establishment of the Office of the Salt Commissioner at Tsinanfu under the direct control of the Financial Department, by appointing an official of the 1st rank as the Commissioner. The Salt Revenue Offices are established at Wangkang, Kwantai, Hsiwei, Fukuo, Shihho, Yungli and Taowei to superintend manufacture, and under these offices are established Inspection Bureaus at Shihtsun, Huangtaichiao, Tehchow and Cheyuan to examine the transportation of salt.

Every district throughout Shantung is annually allotted with a certain number of salt warrants (*Yenpiao,*) and required to bring up the sale of salt within its area to the allotted amount of warrants, any district failing to satisfy the requirement being punished while one disposing of more than the allotment is to be supplied with more warrants. It is said that during last year, the Government issued 600,000 warrants in all, Kuping Tls. 4.20 being charge on each warrant that has the license of selling 395 catties of salt.

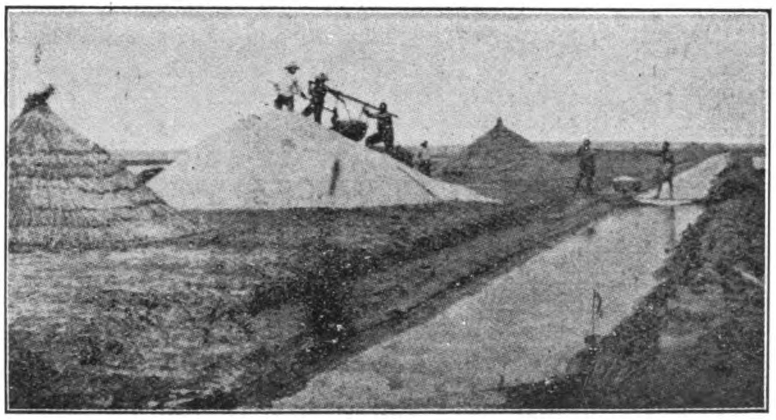
At Tenghsien and Ihsien licensed salt merchants having been financially crippled since the establishment of the Republic, the Government undertook to handle salt directly, and so the said two districts are now under the system of a pure government monopoly. In other districts many salt merchants were likewise declared insolvent owing to the depression of business manifested since 1911. For a while, the saline supply was looked after at some districts by local officials, but during the latter part of the following year salt merchants in these districts combined and organized a company for the purpose of transporting and selling government salt. The combine being duly sanctioned by the Salt Commissioner, the business was carried into effect on June 1st, 1912. The company divides the districts into the three following sections for the sake of convenience to carry on its business, the figure found hereunder annexed after the name of each district being the number of salt warrants allotted:—

THE SOUTH-EASTERN SECTION.

Lintsing	2,833
Taokuan	4,167
Weihsien	3,252
Changlê	2,862
Itou	6,057
Linchü	4,000
Hsintai	2,958
Ishui	2,548
Mengyin	800
Lêan	1,616
Jechao	567
Pohsing	1,683
Chüchow	2,453
Fanhsien	1,507
Chaocheng	3,000
Shouchang	2,500
Yuncheng	4,166
Hochai	5,000
Total	36,186

THE NORTH-WESTERN SECTION

Tehchow	4,096
Yücheng	2,016
Ngenhsien	3,938



Salt Fields.

Wucheng	2,584
Linhsing	5,167
Chiuhsien	1,964
Tangyi	2,935
Huahsien	1,913
Kuanhsien	3,667
Total..	27,980

THE SOUTH-WESTERN SECTION.

Kuancheng	1,352
Tingtao	1,558
Chengwu	1,750
Chinhsiang	2,333
Total..	6,993

With the exception of the above enumerated thirty-one districts and the two others previously referred to, where the Government is directly dealing in the business, in the rest of the places under the Shantung Salt Administration licensed salt merchants are monopolizing the trade.

Salt produced at the mouth of the Yellow River is sent to Tsinanfu, Chengpei and Huangtaichiao by the Siaotsingho and then distributed to various places. The cargo sent to the interior of Shantung is called *peiyün*—the Northbound, while that transported to Honan, Anhui and Kiangsu is called *nanyün*—the Southbound.

In former days the Southbound cargo was shipped by the Yellow River and the Grand Canal, but since the construction of the Tsin-Pu Railway, it is sent to Lêkow from Huantaichiao by taking the advantage of its branch line, and then forwarded to its destination by the main line. That to be sent to Kueitehfu is shipped to Tsining by the railway via Yenchow, and then transported by carts farther on.

The price of salt at the place of production is about $0.20 per 100 catties, and freight on it from the river mouth to Huantaichiao is something like $0.15 per 100 catties. This is sold at Tsinan at $1.10—.70

Sometime ago the President issued a regulation for the salt gabelle. As it is a sort of law, the regulation should have been approved by the National Assembly, but as the Parliament was then suspended an irregular step was taken and it was issued in the shape of a provisional regulation by means of a Presidential Order. The Regulation contains 13 articles, of which five are translated and given below.

Art. 1. Provisions contained in the present Regulation shall be applied to all the salt producing districts in the Chinese Republic, except Mongolia, Tsinghai, Hsinchiang and Tibet, which being considered to be the territory under special conditions are placed outside of the scope of this Regulation.

Art. 2. Salt producing districts and those consuming salt shall be divided into the two following Sections:—

The first Section—Chihli, Shansi, Kansu, Shensi, the north of the Hwaiho in Kiangsu, Kirin, Hailungkiang, Honan, and Kwanpei salt consuming districts in Anhui.

The Second Section—Salt producing districts in the south of the Hwaiho in Kiangsu, Chekiang, Fukien, Canton, Szechuan and Yunnan, and the salt consuming districts in the south of the Kwanho in Anhui, Kiangsi, Hupeh, Hunan, Kiangsi and Kweichow.

Art. 3. The rate of the salt gabelle shall be $2.50 per 100 catties. Prior to January 1 of the 4th Year of the Republic, the old scale of the gabelle shall be maintained in the Second Section, whilst in the First Section the rate of $2.00 per 100 catties shall be charged.

Art. 7. Private manufacture of salt is strictly prohibited. The offender shall be dealt with in accordance with the provision of the Regulation.

Art. 12. The Regulation shall be enforced in the First Section commencing from January 1, the 3rd year of the Republic, and in the Second Section from January 1, the 4th Year of the Republic.

If for any reason it is found impossible to have the Regulation enforced on the date stipulated upon the enforcement may be postponed on the application of the Salt Commissioner of the district, provided the matter is approved by the Financial Minister.

From the above, Shantung belongs to the First Section, and therefore the Regulation was to be enforced from January 1 of the present year, but no such report has been received. At present, Tengning, Yungfu, Wangkang, Hsiwei, Kwantai, Fukuo, Shihho, Yungli and Taowei are known as districts where salt is manufactured in the Province, whilst "pond salt" is produced at Tsaochow, Tungchang, Chining and Tsinan. The total of official salt produced annually in Shantung is estimated at about 250,000,000 catties. The product is forbidden to be carried into other salt districts unless specially permitted by the Financial Department.

Beside the places above enumerated, there are districts in Shantung, where people are allowed to manufacture salt privately without paying tax to the Government. These consist of Fushan, Penglai, Ninghai, Wenteng, Jungcheng, Haiyang. Laiyang, Chihsia, Hwanghsien, and Chaoyuan—the above 10 districts found under the jurisdiction of Tengchow,—Chang-i, Yehhsien and Pingtu—the above 3 districts formerly found under the jurisdiction of Laichow,—Kiaochou, Chimo and Kaomi—the 3 above districts formerly found under the jurisdiction of Kiaochou,—Chucheng and Jihchao,—the above 2 districts formerly found also under the jurisdiction of Kiaochou.

The franchise was granted during the Sung Dynasty to the eighteen districts aforementioned on the memorial of a certain Su Chang-kung, who pleaded the Throne to exempt the local people from taxation on salt manufactured in consideration of their extreme poverty and the barrenness of the soil. During the 8th year of Yungcheng in the Tsing Dynasty, however, a nominal tax was made to be levied, as a sort of a surtax on land, the amount being one per cent. on every tael of land tax. Free manufacture and disposal of salt at the market price, regardless of the official price, was sanctioned, provided the salew as limited within their own districts. In other words, salt so manufactured was forbidden to be shipped to any place not treated under the special exequatur.

THE TE CHOW ARSENAL

The military arsenal at Te Chow was established in its present location in 1902, a large part of the machinery being brought from the old East Arsenal at Tientsin, which was partially destroyed during the Boxer outbreak and abandoned soon after. Te Chow is situated in Shantung Province, on the Tientsin-Pukow Railway, about 90 miles south of Tientsin, and although a fairly large city contains little of interest except the arsenal. This occupies very extensive grounds and numerous buildings, a majority of which are of European style, and is divided into the following departments: (1) The powder factory, including two acid-making plants; (2) the cartridge factory, in two divisions; (3) the projectile factory; (4) the general machine shop.

POWDER FACTORY

The powder manufactured here is a smokeless "cotton" powder, very similar to the old "poudre B," an early type of French smokeless powder. It is made by first treating clean cotton with mixtures of sulphuric and nitric acids in various proportions to produce soluble and insoluble guncotton. The two varieties are then mixed and treated with ethyl-alcohol, which gelatinizes the mixture, the resulting compound being then rolled between hot rolls into thin, semi-transparent sheets, which are cut up into small flakes (or leaves) by machinery. A small amount of graphite is added in the driers and the powder is then ready for proving.

At Te Chow two strengths of powder are produced; a low-pressure powder used for the "old model" (7.9) cartridges and for charging shrapnel shells, and a high-pressure powder used only for the Chinese Mauser (6.5) cartridges. As only about 170 pounds of the former and 100 pounds of the latter are produced per day, a large amount of imported powder (principally German) is also used in the cartridge factory. The mixing and treatment of the powder constituents appear rather inaccurate, and the finished powder receives only the firing test for pressure and velocity. During the test the powder is often left dangerously damp, to insure sufficiently high pressure. If this results in too high pressure, the batch is again run through the driers. There is no expert European supervision, and carelessness among the workmen results in not infrequent accidents and explosions.

Most of the machinery in the powder mills has been built in the works, including all the mechanical cotton washers, mixers, and centrifugal driers. A large cotton-cleaning machine is from a Manchester, England, maker, and a few of the machines for rolling and cutting up the gelatine sheets have been imported from Krupp of Germany.

In connection with the powder factory a sulphuric and a nitric acid plant is operated; 2,700 pounds per day of sulphuric acid are produced by the chamber system, and about 1,600 pounds of nitric acid per day are distilled from iron retorts.

CARTRIDGE FACTORIES

There are two separate and distinct cartridge factories. The 7.9-millimeter factory was built in 1902, and the 6.5-millimeter factory at a later date. Each factory has its own brass furnaces, annealing ovens, and rolls, and each its own machine shop for making tools, dies, etc. Each factory employs approximately 300 hands, and each produces 25,000 complete cartridges per day of nine hours. However, as the Chinese military authorities have decided to discontinue gradually the manufacture of the 7.9-millimeter rifle, the output of 7.9 cartridges will also be diminished, and some of the machines in that factory will be altered to make the small-caliber cartridge.

Most of the cartridge-making machines and machine tools in the older factory bear the name of Ludwig Loëwe, of Berlin. The equipment of the newer (6.5) factory is principally labeled, "Schuchardt & Schutte, Berlin." A number of machines in each factory have been built in the general machine shop attached to the arsenal, such machines being usually merely copies of imported machines. These homemade machines include 25 or 30 of the small presses used for punching disks from bars and for drawing out the brass cartridge case, 6 double machines for reducing the neck of the shell, and several machines for closing the neck upon the bullet. One type of locally built machine shows some originality. This is a small furnace for annealing the completed shell before loading, in which several Bunsen gas jets are directed upon a revolving table which is fed and emptied automatically.

Each factory has three cartridge-loading machines, of which only one was imported, the other five (exact copies of the first) having been built in the local shops. The original machine is of Japanese manufacture and a copy of a German model, but the homemade machines appear quite as good as the original, and are surprising evidence of the mechanical skill of Chinese workmen, not only because of the complexity of the machine but also because of the perfect accuracy and fine adjustment essential to its successful operation. Each of these machines turns out 55 loaded and capped cartridges per minute.

The most notable deficiency in both factories is the lack of conveying apparatus and of machines for gauging the cartridge case and finished cartridge. There are automatic weighing machines which reject overweight and underweight finished cartridges, but aside from these all gauging is done by hand, about 10 per cent. of all the employees in the factory being so occupied. Bars are conveyed to and from the rolls on hand trucks, but all smaller materials are carried in boxes from machine to machine by coolies. Moreover, some rearrangement of the machines is needed to permit of a steady flow of materials through the factories. The chargers (or clips) for both sizes of cartridges are filled by hand, and then packed by hand into pasteboard boxes before being cased. There is no heating apparatus in the factories, with the result that it was noted in February that some of the finer machines were running badly, owing to the oil thickening upon them.

Every part of a complete cartridge is manufactured in both factories. Copper primers are pressed and charged with fulminate; steel jackets for bullets are manufactured, and lead wire for the interior of the bullet is drawn from machines in the works. The cardboard boxes for packing the finished cartridges are made here, and even the cardboard is manufactured locally in the powder factory.

MACHINE SHOPS OF CARTRIDGE FACTORIES

As has been mentioned, each cartridge factory has its own machine shop, the machine tools being in the same room with the cartridge-making machines and almost as numerous. In fact, there are far more machine tools than would be required if they were used to anything like their full capacity. Ninety per cent. of these machine tools are lathes, of which about one-third (20 or more in all) have been built in the general machine shop of the arsenal. The remaining two-thirds bear the names of German makers or agents. All of these lathes are merely screw-cutting engine lathes, in sizes from 8 to 16 inches, none being equipped with any of the special features (such as taper or relieving attachments or even draw-in collets) which are usually found on tool-room lathes. The American type of tool post has been retained on the American lathes, and a uniform size of steel is used in making tools for them, but there can be no doubt that, in general, the open tool rest with three or four set screws is preferred by Chinese workmen, owing to the custom which prevails throughout China of making tools from various sections of steel, old files, etc. Most of the German lathes, as well as those built locally, are gap lathes, but it was noted that no work was being done upon them that could not have been done as well upon a solid-bed lathe.

In addition to the lathes mentioned, there are about a dozen other machines from American shops. These include six to eight upright drills in small sizes, two or three sensitive drills, several small shapers, and a very recently installed No. 3 universal milling machine. Throughout the entire arsenal there are no grinders of any kind, except the usual floor grinders and the roll grinders. Several machines especially designed for roll grinding have been imported from Germany, but these have all been set aside, and the work is now being done upon an extension-bed lathe from Edwin Harrington & Son, of Philadelphia, fitted with a locally built grinding attachment.

PROJECTILE FACTORY

Only one size and type of projectile is manufactured here—a 7.5-centimeter shrapnel shell. The foundry of this department has two cupolas, each with a capacity of 1,500 pounds of iron per hour; but as the maximum capacity of the molding and machining departments is only 150 shells per day, one cupola is more than sufficient for the requirements of the department. The character of the machinery and manufacturing methods in this department may be judged from the fact that 120 men are employed to secure the output stated. Brass patterns are used, four in a group, and there is a homemade machine for drawing the patterns, but the flask is filled and rammed by hand, two workmen taking 15 minutes to finish a mold. The core is made upon a brass tube, which is of sufficient length to project through the nose of the shell.

In machining the shell the first operation is to bore and thread the aperture for the fuse case. For this work plain engine lathes are used, the base of the shell being secured in an independent chuck in which the heads of the cap screws project an inch or more. The nose of the shell is then gripped in a chuck and the cylindrical part is turned in a lathe which has two connected tool posts, the rear one taking the finishing cut. The two grooves for the copper shell rings are cut simultaneously on a lathe with two connected front tool rests, and then the rings are hammered on; after this the shell is forced by a large press through a die which seats the rings. The last operation is to return the shell to the lathe and turn up the copper rings. Eight lathes are employed nine hours per day upon these shells, giving an output per lathe of only a trifle more than two shells per hour. Brass fuse cases are made in the same shop in which the shells are turned, five or six small turret lathes being used for that work. A single automatic would more than equal the combined output of these machines.

GENERAL MACHINE SHOP

The general machine shop includes a foundry, smith shop, boiler shop, and machine shop, and is maintained to repair and build machines in and for the arsenal. Some of the machines built here have been mentioned previously, and the director states that about 100 of the machines now in use in the various departments are of local manufacture. In addition to several presses and other cartridge-making machines, castings for shapers and small steam pumps are machined.

The foundry has two cupolas, each with a capacity of 2½ tons per hour; and the smith shop contains one small steam hammer and one new belt-driven pneumatic hammer of 100 kilos (220.46 pounds), from a German maker. The boiler shop possesses neither power machines nor compressed air, all plate cutting and riveting being done by hand, while plates are drilled, it seems, in the machine shop. However, it should be said that this shop is maintained only for making tanks, repairing boilers, and similar light work. In the pattern shop, likewise, there is not a single woodworking machine, not even a lathe; however, the Chinese workmen produce beautiful patterns, though the work proceeds slowly.

The machine shop has a fairly good equipment for general work, but no modern high-speed machine. Several upright drills and two or three small shapers are from American makers, but the larger machines are all of British origin. Two planers of good size and a couple of very large upright drills are from Scriven & Co., of Glasgow, while G. & A. Harvey, also of Glasgow, have supplied some large gap lathes and two slotters. Turret lathes, milling machines, grinders, and radial drills are conspicuous by their absence. Surprisingly few drawings are seen in the shops, as the workmen seem to prefer to take measurements from the actual parts which they are duplicating.

POWER PLANT

Power for the various shops is generated in 8 or 10 small units scattered about the works The boilers are nearly all of the Lancashire type, and pressures of only 60 to 80 pounds are carried. The engines are all Corliss pattern, running non-condensing, and average about 100 horsepower. The largest of these, and the only compound, is one from the Vilter Manufacturing Co., of Milwaukee, which drives the machines in the powder factory, and is said to be very satisfactory.

A recently installed electric lighting plant consists of two 30-kilowatt direct-current dynamos, belt-driven by boiler-engine sets. The dynamos are of 225 volts, up to 134 amperes; and the boiler engines are of the Wolf type, the engine being mounted upon the boiler, which has the usual Wolf removable head and tubes. Dynamos and switchboard are from Siemens & Schuckert, of Berlin, and the boiler engines are from Heinrich Lanz, of Mannheim, Germany.

TSINAN ARSENAL

The Arsenal is situated 8 li north-west of the town. Work is carried on in eight departments, viz., (a) gun department, (b) cartridge department, (c) casting department, (d) forging department, (e) rolling department, (f) powder department, (g) electric department and (h) carpenters' shop.

It may be said briefly that the Arsenal is able to make cannon, rifles and cartridges besides machinery, boilers, powder, electric lamps and batteries, etc., from a given pattern; but the work is rougher and not so neatly finished as that of Foreign firms. At present cartridges and powder are being manufactured, besides machinery for use in the Arsenal. The mining machinery at Tzu-ch'uan was supplied by the Tsinan Arsenal, also the bugles and manty of the arms used by the Shantung troops. They are also experimenting with the Mannlicher rifle, with a view to manufacturing it at the Arsenal, but it is not yet known with what success.

GERMAN STEEL WORKS IN SHANTUNG

For several years the German authorities have been keenly interested in the establishment of a modern steel works in Shantung, as an outlet for the rich iron and coal deposits located within their mining zone. The directors of the Krupp Works in Germany have taken the lead in the preliminary investigations and studies, as they believe rightly, that with adequate supplies of cheap raw material, and abundance of cheap labor, the products could be placed on the Chinese and Oriental markets at prices defying European and American competition. Japan, through its lack of iron ore deposits, is dependent largely upon China for its supplies, thus providing a market for large quantities of ore and pig iron.

It is reported that samples of the ore, analyzed 65 per cent. iron, 24 per cent. manganese, .03 per cent. phosphorus and .08 per cent. sulphur. The deposit is about 2 kilometers (1.242 miles) in length, and the veins from 25 to 50 yards in depth, with a heavy dip. It is estimated there are 100,000,000 tons of ore in the district.

The deposit is located on the Tiehshan (Iron Mountain) near the railway station of Chinglingchen. Another deposit exists at Sy-bau Mountain, near the railway station of Changtien. Large deposits of limestone, and a plentiful supply of coal are located within the regions embraced in the German mining rights.

Last year (1913) the Shantung Railway Company, having previously absorbed the Shantung Mining Company, determined to close the unprofitable Fangtze coal pit, and concentrate its capital and energies in the development of the rich iron deposits.

A director of Krupp's and two other German mining and steel experts made a special visit to China last autumn, for the purpose of conducting the final investigations for the exact location of a suitable steel plant. On the strength of their report, the board of the Shantung Railway Company in Berlin, at a meeting held early this year, voted to proceed at once with the scheme. The cost of the plant was estimated at Marks 10,000,000 ($2,500,000 Gold) and it was resolved that the share capital of the Company should be increased by Marks 10,000,000, raising the total capital to Marks 70,000,000. It was also voted that for the first three years, a dividend of five per cent. should be paid out of capital on the paid up shares.

The works were to be erected between Szifang and Tsangkau, about 10 miles out of Tsingtau on the line of the railway, and provided for two blast furnaces with a daily capacity of 150 tons. The location of the plant at this point, within the leased territory, under German jurisdiction, was influenced by political and commercial reasons. The works would materially increase the earning capacity of the railway, as half of its revenue is already derived from the freight of coal from the mines in the interior to the port at Tsingtau.

ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

RAILWAYS

Lung-Tsing-U-Hai Railway:—The extension of the Pienlo Railway eastwards from Kaifeng has been completed as far as Kweitehfu and irregular trains run over a good part of the way. Regular traffic will begin at an early date. The distance from Kaifeng to Kweiteh is nearly one hundred English miles.

China's Railway Loans:—Most of the Railways under the administration of the Ministry of Communications have been built with foreign capital. The yearly amortisation and intere t on these loans aggregate a considerable sum every year. With a view to maintaining its credit, the Ministry has met its commitments in respect of these loans with commendable promptitude.

The period that generally proves most embarrassing to the Ministry is, according to the "Peking Gazette," the one covering the months of September, October and November. Within these three months the total commitments maturing for payment reach the large sum of seven million dollars. In normal times it is not altogether easy for the Ministry to meet and pay this sum; but this year the latter has been seriously embarrassed on account of the outbreak of the war in Europe, disorganizing, as it has done, the financial market of the world and causing an excessive rise in the exchange rate.

Through the successful management of the railway affairs of the Government by the Authorities of the Ministry, all moneys due for amortisation and interest on these railway loans have been paid in full as and when the same became due. Moreover the working of the Kin-Han Railway has been so profitable that the Ministry was able in addition to paying the regular interest, to declare an extra dividend in connection with the Kin-Han Railway Redemption Loan issued as a gold loan in London some four years ago. The extra dividend declared for the past financial year was at the rate of $1.479 per $100—the highest on record. We understand that the declaration of this extra dividend has had a most favourable effect on Chinese railway credit in London, coming as it did at a time when other foreign securities have failed to yield their usual dividend to British bondholders. The Minister and the Vice-Minister in charge of railway finance are to be congratulated on the success that has attended the administration of the railways under their charge. The following is a li t of the railway commitments paid by the Ministry during the months September—November.

The First Tsin-pu Railway Loan	£125,312.10S
The Second Tsin-pu Railway Loan	„ 75,187.10S
Loans from Shanghai and Hongkong Bank	„ 125,250
The Principal and Interest for Redemption of the Canton-Hankow Railway	„ 114,950
The Shanghai-Nanking Railway Loan	„ 77,192 10S
The Shanghai-Hangchow-Ningpo Railway Loan	„ 37,593 15S
The Kwangtung-Kowloon Railway Loan	„ 37,593 15S
Loan for Redemption of the Canton-Hankow Line	„ 22,554
Loan for Redemption of the Canton-Hankow Line	Y 77,000
Loan for Redemption of the Canton-Hankow Line	$ 19,893
Bonus of the Loan for the Redemption of the Canton-Hankow Line	„ 147,900

The aggregate sums mentioned above are £615,634 Yen. 77,000 and $159,793. The sum total in Mex. dollars is approximately 7,000,000.

Railway Profits:—The Ministry of Communications has given the following account of its revenue and expenditure during this fiscal year:—

1. From the railway department its total receipts amounted to over twenty-seven million dollars and after deducting 15 million dollars for its expenditure, it yielded a net profit of twelve million dollars.
2. From the telegraph department the total receipts aggregated six million dollars and after deducting the expenditure of the said department, it turned out a net profit of two million dollars.
3. From the Post department the total receipts amounted to 4,500,000 dollars and its expenditure about five million dollars.

The Szechuan Railway:—Has been granted permission by the Ministry of Communications to establish a bank and a navigation company.

Railway and Telegraph Materials:—In view of the great amount of materials supplied to the telegraphs and railways in China every year, it is highly necessary for the responsible authorities to study carefully the economical use of the materials, the best way of their preservation, comparison of prices, the quality of goods, etc., so as to get the best advantage in the use of all kinds of materials. With this object in view, Mr. Liang Tun-yen, the Minister of Communications, has organized a commission specially for the study and experiment of railway and telegraph materials. Among the officials appointed to the Commission, are Mr. Lu, the Chief Technical Expert, Dr. C. C. Wang, Chief of the Railway Accounts Department, Mr. Yuan Ling, the Chief of the Department of Railways, and others.

Szechuan Railway Company:—A number of the shareholders of the Szechuan Railway Company have recently submitted a petition to the Ministry of Communications for the punishment of the officers of the said company on account of their misappropriation of funds. The petitioners complain that they are unable to get the principal and intere t of their shares and the reason for this, according to the petitioners, is chiefly due to the corruption of the employees of the said company, who have misappropriated the funds of the company for their own use.

Tientsin-Pukow Railway, Northern Section:—It is stated from Peking that Great Britain has opened negotiations with the Chinese Government with a view to taking over the German loan interests invested in the northern half of the Tientsin-Pukow Railway.

Peking-Hankow Railway.—The Ministry of Communications has issued a telegram in connection with the payment of the interest and the profit of the Peking-Hankow Railway for the year 1913. In accordance with the regulations drawn up by the Board of Communications of the late Ching Dynasty, the twelfth payment of the yearly profit of the Peking-Hankow Railway was due on October 19. The net profit of the line during the year 1913 amounted to $4,833,151.52, one-fourth of which is divided among the shareholders. The amount to be divided among the shareholders is $1,288,287.88. The divis on is to be made in proportion to the total amount of capital, which is Taels 58,000,000, i.e. $1,479 for every bond. The payment of the interest and the profit may be obtained on the presentation of bonds at the agent's offices of the Railway in Peking, Tientsin, Hankow, Shanghai, Hongkong and other places.

New Russian Railway Concession in China.—(A Japanese view) "We are in receipt of news that St. Petersburg lately obtained from Peking the concession to lay a railway line between Aigun and Tsitsihar. Indeed, we are surprised that the Slavs should be able to be so active about extending their national prestiges in Northern China, when they are face to face in another direction with an incident which is a stake against the existence of their nation. Ever since they ceded to us the southern half of the Eastern Chinese Railway, they felt a great military uneasiness in Eastern Siberia and had to lay, for reliev ng their position, the Amur Railway. When this is completed, they are in possession of the four railway lines, which can co-operate like clockwork,—the Siberian Trunk line, Eastern Chinese line, Amur line and Ussuri line. And now comes another line, which connects the Amur with the Eastern Chinese line. Undoubtedly, this will greatly strengthen the Russian position in the Far East. Moreover, we may be able to obtain similar concessions in that part of Manchuria."

Kalgan and Sui-yuan Railway.—The construction of the Kalgan and Sui-yuan line is progressing rapidly. Some forty miles of the line to the west of Tatung have already been constructed and train service will commence on the 10th instant. On account of the European War, the work was in danger of being hindered. It is reported that a loan of $300,000 was successfully negotiated with a certain Corporation which will be quite enough to supply four months' expenses.

Railway Conference.—During the month of December the Department of Communications convened a conference of railways in China in regard to traffic arrangements. In the conference the Peking-Mukden, Tientsin-Pukow, Shanghai-Nanking, Peking-Hankow and Peking-Kalgan Railways were represented. The conference was held at Shanghai. The representatives in attendance at the conference were:—

Peking-Mukden Railway:—Mr. J. G. Foley, the Traffic Manager; W. H. Steel, Deputy Traffic Manager; and Wm. Handersen, Chief Accountant. Tientsin-Pukow Railway:—T. C, Share, Chief Traffic Inspector and H. Brickner. Chief Accountant.

Shanghai-Nanking Railway:—J. D. Read, Traffic Manager, and E. R. Morris, Deputy General Manager.

Peking-Hankow Railway:—Wang Shih-yu (?), Chief of Secretariat of the Traffic Department, Ho Yung (?), the Traffic Manager, and Pai Lu-yi (?), Chief of the Accountants Section.

Peking-Kalgan Railway:—Chen Pin-lun, the Traffic Manager.

Canton-Kowloon Railway.—Mr. H. T. Foord has been appointed Engineer-in-Chief of the Canton-Kowloon Railway.

Electrification of Tokyo-Yokohama Line a Success.—The trial of electric cars on the new lines between the Tokyo Central Station and the New Yokohama Station at Takashimacho, which took place Nov. 20th proved to be very successful. The new traffic of electric cars will be opened from December 15th, between the new railway stations in Tokyo and Yokohama. This new service, however, does not mean that the steam trains between Tokyo and the present Yokohama railway station near the Benten bridge will be stopped altogether. The steam trains which are specially running between the two cities will be discontinued. The ordinary trains coming from Yokosuka, Kodzu or west of Yokohama will make stops at the present Yokohama railway station, which will continue until June, 1915. After June next year neither steam nor electric trains will come to the present Yokohama railway station until March 1916.

After December 15th the railway line between the new Yokohama central station, and the present one will become a single line. The road along the creek Sakuragawa from the Oye bridge to the Takashimacho station will be extended in width from the present 30 feet to 42 feet. The elevated line between the present station and the new Takashimacho station will be completed by the end of March 1916, and after that electric cars will run between the Tokyo Central Station and the present Yokohama station. The Yokohama station will be completed in June next year, and the present Hiranuma station will be retained until then for the Tokaido express service.

Extension of Private Railways.—The *Tokyo Asahi*, which is opposed to the State ownership of the railways, calls the attention of the authorities to the advisability of amending the regulations so as to make it possible for private undertakings to construct or extend the lines which are unfinished. The Government on account of the war is not expected to be able to supply fresh funds for railway construction, but the paper thinks that if private undertakings be permitted to take up the work, it may be quite possible to be carried out and the country's railroads may thus be made to realize development which cannot be expected of the Government under the present circumstances.

Kalgan-Dolonor Project:—General Ho Chung-lien, Tartar-General of Chahar, has recently submitted a request to the Government, stating that in view of the commercial and strategical importance of both Kalgan and Dolonor, these two cities should be connected with a railway by prolonging the Kalgan-Hsuiyuan branch line to the latter city. On receipt of this request the Government deems this measure as absolutely necessary for commercial and military facilities and has referred his request to the Ministry of Communications to be carried into effect. It is said that the projected branch line will traverse a distance of 360 li and will not cost the Government very much to build.

Chefoo and Lungkow Projects:—Peking, Nov. 24.—A keen competition is being held between the Chinese capitalists for the right for the construction of two railways, one from Chefoo to Weihsien and the other from Lungkow to Weihsien, and both parties have sent their representatives to Peking to canvass among the government authorities at Peking. It is reported that the authorities of the Department of Communications are of opinion that any of the railways, if to be constructed, should be constructed with Chinese capital and not with borrowed money.

Mr. Lu Chen-chang, adviser to the Foreign Office, has received instructions from President Yuan Shih-kai to proceed to Shantung for an inspection, and he will start on the mission in a few days. His mission is to inspect the city of Tsingtau in order to gather materials for diplomatic negotiations in the future. Mr. Tzo, Vice-Minister for Foreign Affairs, is reported to accompany Mr. Lu to Tsingtau. (Chuwo)

The Chefoo-Weihsien Railway:—It is said that the merchants and gentry at Chefoo have recently held a meeting discussing their scheme for the construction of the projected Chefoo-Weihsien railway. The merchants and gentry are unanimously of the opinion that as this railway concerns the vital interest of Shantung in the future, it is imperative for them to petition the Government, asking the latter to grant them the right to build the said railway with entirely Chinese capital.

Railway Fortifications:—The *Army* and *Naval Journal* says that the Government has proposed to fortify Shanhaikuan and Chengchow, which are situated on the line of the Peking-Mukden Railway. As the railway is an important line from a military point of view, and it is along Pehai Bay, somebody proposed to build fortifications at important points some time ago. The journal continues that as the construction of such forts are of vital importance, the Government has wired to the Chiang Chuns of Fengtien and Chihli instructing them to send officials to survey these places and make a report as to the detailed expenses involved in the construction work.

Chihli Railway Project:—The local gentry of Chihli have now promoted a railway company for the construction of a line from Wen An Hsien to Liang Hsung Hsien, a distance of more than 200 li, connecting the northern section of the Tientsin-Pukow Railway and the Peking-Mukden line. The scheme of such an enterprise is to facilitate transportation purposes. All districts along the proposed line are well known for their products, rice, provisions, and coal.

The Nanking-Changsha Railway:—As has already been projected by the Government, the Nanking-Hunan Railway will be divided into sections, and the whole line will start from Hangchow, the capital city of Chekiang, and terminate at Changsha, the capital city of Hunan. The first section will comprise both the Hangchow-Shanghai and Shanghai-Nanking Railways, and the second from Nanking to Nanchang, is awaiting construction. The third section will consist of the Nanching-Kiukiang and the Hunan Railways. All these railways have been nationalised. A few days ago the Ministry of Communications sent a party of officials to the South to make an investigation into the projected lines of the said railway.

Nanking-Changsha Railway:—The Managing Director's office for the Ning-Hsiang Railway, a line from Nanking to Changsha, has been opened at Nanking under the directorship of Mr. Sun Tau-yueh (Mr. Clarence Sun). Its establishment is composed of three departments, general, accounts and construction and three chiefs also are to be appointed by the Board of Communications, Messrs. Yui Yeh-chang, Hu Kwei-chao and Lin Chik-chin. It is understood that the British syndicate has only advanced an amount of loan sufficient to meet the expenses for the maintenance of the railway office and the making of surveys for one year.

South Manchuria Feeders:—An agreement was recently signed between the S. M. R. Co. and the Penchihu Colliery & Mining Co. to construct and manage conjointly a railway from Penchihu to Chienchang. In what proportions the required capital is to be produced by the two Companies remains unsettled. The concession for the same has, we understand, been secured from the Peking Government. The proposed line may be regarded as a mining railway, and, pending the satisfactory exploitation of markets for the outputs of Niuhsintai and other collieries along the proposed route, no work will be taken in hand. At present a light rail line runs from Penchihu to Niuhsintai, a distance of about 9 miles. This may be extended, as the requirements may justify, to Chienchang, about 60 miles from Penchihu, or the whole line may be superceded by a standard gauge line, when the economical assets of the country have sufficiently grown.

The Canton-Hankow Railway:—The Wuchang correspondent of the *N.-C. Daily News* writes:

"During the year splendid progress has been made with the railway. It passes the city near the east gate and runs straight across a shallow lake to the Yangtsze. A small hill is being demolished to provide the material for the embankment which crosses the lake, and hundreds of men have been at work blasting digging and carrying.

"Years ago a small railway was built by Chang Chih-tung from the Yangtsze, for carrying copper to the mint and truckloads of copper cents back to the river to be distributed all over China. Those were happy days for the Government, when three copper cash could be melted down and minted into the new coin which represented ten of the old cash. The mint was so extensive that in a few years all the copper in the world could be converted into copper cents. But there is a limit to the most successful attempts to debase the coinage, and in spite of the Viceroy's eloquent appeals, a limit had to be placed by the Central Government upon the output of the mints. And this none too soon, for the dollar, which at one time exchanged for about 800 cash, was exchanged for 1,300, and wages and prices reckoned in cash went up accordingly. So there was no need of a railway to carry the copper.

"The old railway ran beside the lake outside the city, entered the east gate and to the great inconvenience of everybody, ran all along the carriage road, from the gate to the mints in the centre of the city. Since the Revolution most of the lines were taken up inside the city, and the lake was allowed to wash away the embankment and for half a mile or so, the rails and sleepers were suspended in mid air, or collapsed entirely. But within the last week or two the embankment has been repaired and new sleepers and rails laid, but for what purpose we know not."

Inner Mongolian Railways:—The Government has proposed to construct new railway lines outside the Great Wall in order to facilitate communications. The termini of the proposed lines are the several places which are to be opened as trade ports, such as Chifeng, Taonanfu, Dolonor, etc. The first line is from Peking to Jehol, the mileage of which is 140 miles, with a line from Jehol to Chiefeng of 130 miles and another line of 180 miles running from Chingchow to Chifeng. The other lines are from Kalgan to Dolonor of 150 miles and from Dolonor to Chifeng of 200 miles. The total mileage is 800. These lines will be connected with the Peking-Mukden and the Peking-Kalgan Railways. The scheme is now under the consideration of the Ministry of Communications.

First Standard Gauge Railway Engine:—Designed and Built at South Manchuria Railway Workshops. On October 30th, a trial trip was successfully made of a new Railway Engine on the main line of the South Manchuria Railway, on the following schedule:—

Lv.—Dairen .... 1.05 p.m.

Ar.—Nankuanling	....	1.45 p.m.
Lv.— „	....	2.20 p.m.
Ar.—Dairen	....	3.00 p.m.

The event, says the *Manchuria Daily News*, marked a new epoch in the annals of Japanese Railway Engineering. Already on the Imperial Japanese Government Railways home-built locomotives are drawing Imperial Government trains, but all the Japanese home lines are on the narrow gauge. This one, whose trial trip Dairen had the honour of witnessing, is the first standard gauge locomotive ever designed and built by Japanese engineers. The South Manchuria Railway Company had the distinction of producing this interesting piece of work at its central workshops at Shakako, near Dairen, the terminus and headquarters of the Railway, and one of the most flourishing ports in the Far East.

The lay-out of the Shakako Workshops, though on a comparatively small scale, is one of the best and most up-to-date in the world, and the equipment is second to none. Opened only in 1911, with the most modern facilities and machinery that science had invented, nothing has yet become obsolete or old-fashioned, while new inventions and facilities are added whenever they appear. There are nearly 3,000 well-trained employees, the majority of whom live in a model town adjoining.

Having produced some of the most beautiful saloon carriages and passenger cars in the world, as well as goods cars of every description, tram cars, etc., and having, in addition, put out at short notice much machinery, such as huge winding machines for use in the Company's coal mines, etc., it is not to be wondered at that, under such an able superintendent as Mr. H Mori, formerly Superintendent of the Workshops of the Imperial Japanese Government Railways, ambition should soar to the construction of a locomotive engine. And in this endeavour they have been successful beyond their wildest dreams.

Hitherto, the South Manchuria Railway trains have been pulled by the finest locomotives money could buy in America and Great Britain. But this home product has proved by actual running to be the finest engine, with the highest efficiency, among all the locomotives in the possession of the Company. It is of entirely new design, and has been aimed at embodying the merits of the best types in Europe and America to suit the condition of the Company's lines.

Thanks to this initial success, the Workshops are now building five more locomotives of exactly the same design, and are also constructing six double-ender tank engines for the Chosen (Korean) Government Railways. Moreover, it is intended to gradually increase the capacity for building new locomotives and cars.

The following is a description of the engine whose trial trip is undermention :—

The frames are of plates with underhung driving springs, similar to the Continental type, and have 0.176" deflection per short ton, which lies betwen the English and American practices, and effects the best riding of the engine.

The boiler is of the Belpaire type, with cylindrical smoke-box, supported by a saddle made of steel plates, the exhaust pipes in the saddle being of steel.

The brick arch is of special reinforced design, with no arch tube, which has been found, by actual trials already made on several locomotives, to last over seven months without attention.

The superheater is of the Schmidt type, with superheater heating surface of 532 sq. ft.; and the lubrications of cylinders, steam chests, and air pump are by Michalk's patent mechanical lubricator.

The valve motion is of the Walschaert type, and the elliptic valve diagram was automatically drawn by actual valve motion, thus ensuring that the steam distributions in the cylinders are perfect.

Stamp Tax on Railway:—In compliance with the order of the Ministry of Communications, the authorities of the Peking-Hankow Railway have drawn up the regulations governing the use of stamp tax. A stamp of one cent shall be attached on every bill for articles costing $10. The receipt for more than $10 should bear a 2-cent stamp. On every copy of accounts book of the railway in every year there shall be put a stamp of 2 cents. A stamp of 1 cent should be put on a contract which the railway may enter into with its employee whose salary is less than $10. On the contracts for construction work the charges for stamp tax is fixed as follows:—from $10-100, 2 Cts., $200-500, 4 Cts., $500-1,000, 10 Cts., $1,000-5,000, 20 Cts., $5,000-10,000, 50 Cts., $10,000-50,000, $1 and for the contracts of the value of more than $50,000, the charge of stamp tax is $1.50.

The Russo-Mongolian Railway Treaty:—Owing to lack of space, the following translation of the text of the above agreement was crowded out of our last issue. It is understood that while the agreement has probably been concluded and signed, it has not been communicated to the Chinese Government. If the agreement is a fact, it will of course be submitted in due course to the Tripartite Conference:

Art. 1. The Russian Government hereby recognises the permanent right of the Mongolian Government to build railways within the boundaries of its own territory.

Art. 2. The Russian and Mongolian Governments shall consult each other to decide the railway lines and procedure of their building, which should be carried in such a way as to benefit both parties concerned.

Art. 3. In case of railway building, whether financed by the Russian or Mongolian Government or by private persons, the Russian Government shall render adequate help to the Mongolian Government.

Art. 4. When such railways as will connect with the railways on Russian frontiers be built, the Russian and Mongolian Governments shall consult each other on the terms concerning the privileges, localities and railway revenue regarding the same.

Art. 5. Whereas the Mongolian Government has the right to build railways within the boundaries of its own territory, it can raise funds internally to build paying railways, the Russian Government shall not interfere with it. But should the Mongolian Government concede such rights to other countries, the Mongolian Government, for the sake of friendly relations with Russia, should discuss this matter with the Russian Government, before the former makes the actual concession in order to ascertain whether the projected line or lines of railway would jeopardise the Russian interest from an economical or military standpoint.

Art. 6. This treaty shall be duplicated in both the Mongolian and Russian languages. One copy shall be deposited in the office of the Russian Consul-General in Mongolia and the other in the office of the Ministry of Foreign Affairs of the Mongolian Government.

The Kobe Harbor Works:—Seven years ago September 16, the Kobe Harbor extension works were undertaken in order to cope with the growing trade of this port. The general plan was to reclaim land for an area of 662 acres off Onohama, providing four piers and numerous other means of facilitating harbor traffic and communication, including 12 miles of railway track, at an aggregate cost of $6,537,704, the main purpose being materially to add to the accommodation of the Kobe customhouse, and also to construct a breakwater about 3,800 feet long, at a cost of $1,333,760.

Last year the work was pushed forward chiefly in regard to the construction of quays and roads along and on the reclaimed land, the depositing of rubble for the base of the breakwater, and dredging. The reclamation for No. 1 and No. 4 piers, numbering from the east, the latter being that jutting out from Kyobashi, has now been completed, and the laying out of roads and drainage has been finished on the former and nearly finished on the latter. The reclamation works on No. 2 pier have for the most part been completed, while those on the remaining pier, No. 3, have only recently been commenced. Along the east side of Pier No. 4 temporary provisions for mooring have been made, and since October 4 last, when the *Yawata Maru*, of the Nippon Yusen Kaisha, moored there for the first time, about 120 steamers have put up in the new moorings up to date. As to the long breakwater, the construction has been completed for a length of about 900 feet. Roughly speaking, a little more than half of the work has been completed up to the present; it was originally estimated that all would be completed by September, 1918.

Pier No. 1 is to be devoted to passenger accommodation, and a post office, hotel, barrooms, etc., will be erected thereon.

Zamboanga, P. I., Harbor Works:—The long delayed harbor improvements at Zamboanga were commenced in November.

The project is simple and feasible and the cost well within the means of the city. The old mole is to be widened to the width of the street from the shore line to the present pumping station. The concrete retaining walls will be constructed with an overhang to turn back the water in the same manner as the seawall behind the custom house. The roadway will be 11 meters wide and will be flanked on either side by a two-meter sidewalk separated from the roadway by an iron guard-rail. Ornamental benches will line the outer edge of the sidewalks, alternating with concrete urns somewhat similar to those around the governor's house. This ornamental work is very inexpensive and will add greatly to the beauty of the approach to the city while the benches will add much to the comfort of the throngs who seek the cool sea breezes on the dock at night.

The old pumping station is to be moved and on its site there will be constructed a pavilion and kiosk for the accommodation of the public during rainy weather or while awaiting steamers.

The wooden extension of the dock will be widened on the west side to allow more space for the handling of freight and the pier head is to be extended in order to permit the docking of two inter-island steamers at the same time.

MINES AND MINING

Self-Acting Endless Haulage Gear:—The self-acting endless haulage gear, which has been designed and built at the S. M. Railway Workshops, Shahokou, to the order of the Penchihu Colliery & Mining Co. for installation at the Company's iron mine at Miaoerhkou near Nanfen Station on the Mukden-Antung Line, is capable of developing 500 horsepower and transporting 2,000 tons of iron ore per day down the grade of 1 in. 6 from the hill 1,000 ft. high. The interesting feature of this machinery is that the weight of the hanging tubs is contrived to operate an air compressor to generate compressed air of 1,000 cub. ft. per hour at the pressure of 100 lbs. per sq. inch. This does not only serve as the braking power and regulate the rope-speed, but also it is available as motive power for the rock drills in the mine. Moreover, the exhaust air of the drills will work out the ventilation of the mine. It is a wonder, demonstrating to what account science may utilize the energy of gravity, and therefore it is a specimen of the most economical and up-to-date machinery of its kind in existence.

The principal dimensions of the machinery are as follow :—

Horse power... 500
Total weight of machinery 95 tons
Diameter of drum ... ...10'0"
Diameter of wire rope ...1½"
Speed of winding rope ... ...200'-0" per minute

Gold Mines in Heilungkiang:—The Government has recently sent repeated instructions to the Chief Official of Heilungkiang Province ordering him to pay special attention to the gold mines of that province, therefore such mining industry has developed very quickly. A bureau for the various gold mines has been established and Mr. Yu Sheng-wu has been appointed its chief to look after all the mines. Five more placers have been discovered to contain rich gold sand, and among them the place called Huohsiuying is the richest. This district covers an area of 40 li in length and 10 li broad, and it will give work to 3,000 workmen for 20 years. The labourers' wages are fixed at 0.13 gold per day.

Iron Monopoly in China:—The "China Times" reports:—Regarding the state ownership of iron mines in China it has been duly decided at a meeting of the State Department but the rights already granted will not be touched upon.

Japan's Mining Scheme for China and the South Seas:—The Parliamentary Correspondent of the *Japan Times*, writing on October 31st, say: It is intended to exploit different kinds of mines in localities outside of the Imperial dominions so as to import ores for refinement in this country. The appropriation for this purpose will be used in dispatching experts to such places as may be considered inviting for the new undertaking. The amount of the appropriation will not exceed forty thousand *yen*, and the points to which the experts may be sent for making necessary investigations will be China and South Sea Islands. Natural resources which have remained undeveloped in those countries are believed to be quite extensive, and the officials in the Ministry of Agriculture and Commerce have long been looking for an opportunity to make a new opening for Japan's mining industry by facilitating importation of necessary ores from abroad.

When a new mine is discovered, or an improvement is found to be possible for one already in state of working, the expert sent to the place will report to that effect to the Minister of Agriculture and Commerce. The same report will be open to those who may be prepared to advance the necessary amount of capital for working the mine on a business basis. This new line of work will no doubt be welcomed by those who are interested in the development of Japan's mining industry and it is also believed to be highly beneficial to the country to which Japanese capital would come to be employed for developing its hidden resources.

It is believed that the islands of the South Pacific located north of the equator will receive first attention together with exploitations along the big waterways in China. Already a good deal of expectation has come to be felt in certain quarters in the work contemplated by the Mining Bureau in the Ministry of Agriculture and Commerce. A very extensive field is believed to be in existence for an exploitation of this kind.

Anglo-Chinese Mining Co:—A rich silver mine located at Lung-Chiao-Shan, Tayeh, the concession for which was held by Chinese, is to be developed with the assistance of a British mining syndicate, between whom and the concessionaires an agreement is reported to have been concluded. It is stated that the capital of the company, which is to be furnished by the British syndicate, will amount to twelve million dollars. No portion of it may be used for any purpose other than the operation of the mine, the construction of a smelting mill, the building of railways and the transportation of ore. The company is appropriately named the Anglo-Chinese Mining Company, and one of the articles in the agreement provides that the chief and assistant engineers shall be foreigners whose salaries and terms of employment shall be fixed by the Company subject to the approval of the Chinese Government.

Ching Hua Mining Co:—For the development of a copper mine in Nanchang district, Hupeh, the Ching Hua Mining Company has been established at Wuchang. It it stated that the ore contains as much as ninety per cent. of copper and as it is considered that the smelting process can be improved by the installation of foreign machinery, it is probable that modern foreign equipment will be secured. The Company has a capital of $100,000.

The Ping Hsiang Mining:—Tax office collected in October Tls.13,900 for remittance to the Provincial Finance Department.

Copper for Hupeh Mint:—A big quantity of copper recently ordered by the Wuchang Mint, weighing 10,000,000 pounds, from Yunnan Province, and a portion from Japan through Mitsu Bishi and Company, has arrived at Wuchang. Delivery has been taken and the material transported to the Mint.

Pekin Syndicate Agreement:—The dispute between the Honan people and the Peking Syndicate as to mining rights and boundaries has now been concluded. An agreement was signed in Peking on November 9, by Mr. Hu Sak-ching representing the Honan people and witnessed by a deputy from the Honan Civil Governor and an attorney from the Peking Syndicate. The Agreement comprises eighty-two articles and conditions.

The Hankow Tao Chen Metallurgical Co., Ltd., is capitalised by the people and under the supervision of the Government. The Company is now testing a silver mine and a big quantity of ores is required to be shipped to Shanghai for further assaying. The Hupeh Civil Governor, therefore, has been requested to grant the Special Houchi and replied that the privilege can only be given by the District Mining Superintendent.

Yunnan Mines:—The export of antimony, which entirely ceased during 1912, has been resumed to the extent of 8,550 cwts. during the year under review. The purely Chinese smelting and refining plant at Chih Tsun is doing well with four small furnaces (total output 2 tons of antimony per day), and is arranging for the erection of two more.

Hupeh Mining:—The Yang Hsin and Tayeh districts in Hupeh are known for their mining regions. Up to the present there are sixty-one mines in Yang Hsin District and seventy-six in Tayeh District registered in the record of the Yang Ta Mining Bureau. Out of 137, more than forty mines have worked successfully with sufficient capital. Unexpectedly as a result of the present war, products, principally coal, have been stored in unusual quantities, as there is no market even at a cheaper price. The mining companies have eventually suffered an indirect loss and it is said that the Tung Chi Pao, Yui Lee and Huk Kee Mining Companies have several ten thousand tons of coal in stock unsold, involving loss of interest.

Belated Mining Advice:—Yang Shih-chi, Assistant Secretary of State, has presented a petition to the President suggesting the development of mines in the provinces on a large scale, thereby relieving the people of their poverty. He recommends the construction of refineries and the training of mining experts.

Mines Along the Railway Zone:—As there are many mines within easy reach of the various government railways, if properly worked there will not only be an accessible supply of coal to the various railways but, in view of the facility of transportation, its cost of production will be extremely low. For this reason the Ministry of Communications has instructed the Peking-Hankow Railway Authorities to institute an investigation into the regions through which the Kin-han Railway runs and to report to the Government how many coal mines they have discovered within easy reach of the railway and what kind of coal these mines produce; so that the Government may take further steps to work such mines. The Railway Administration has forwarded a report on the subject. The report says that in Fangshanhsien, Chihli, alone, there are 167 places where coal is found. On account of the lack of capital to develop the mines, the country people mostly resort to the process of excavation in an unorganized way. The highest price for ten thousand catties of such coal is seven dollars. There are twenty-seven collieries which are now being worked The price for one ton of this coal is between $1 and $9 There are 23 companies which have stopped working their mines owing to the lack of funds, but it is expected that they will soon reopen business.

Wolfram Mining in Siam:—Mining for wolfram in Siam is of recent development. However, according to a report published in the Directory for Bangkok and Siam, this mineral had been known to the Chinese tin miners for a long time as "dead ore," but its commercial value was unknown until some of the ore was taken to Singapore for analysis, and this black mineral was found to be wolfram and to have a workable value.

The richest deposits of wolfram were found in Nakon Sri Tamarat on the east coast of the Siamese portion of the Malay Peninsula. Here the wolfram ore had been left in great heaps as valueless material after having been separated from the tin ore by the Chinese miners. The amount of wolfram recovered during the fiscal year 1912-13 was 309 tons, against 119 tons for the previous year. It is said, however, that the output of this ore is likely to diminish soon, as the surface workings are now nearly exhausted, and that for the working of the deeper deposits on proper lines special knowledge and considerable capital will be needed.

Not long ago a European company started working for wolfram in Koh Samui, an island near Nakon Sri Tamarat, but the experiment was not successful and the works have now been abandoned. Wolfram in moderate quantities has also been found at Puket on the west coast of the Siamese Malay Peninsula, and this mineral is said to be fairly widely distributed throughout the peninsula.

American Coal Mining in Philippines:—A group of American capitalists has been interested in the development of the coal deposits of Mindanao, on the east coast of the island. The deposits have been prospected by coal experts and pronounced extensive and of good quality. The Bisbig River flows through the region and into a bay that can be converted into a good harbor with little expenditure. There are said to be three veins of coal superior in quality to that which has been mined in other parts of the islands. The region of the Bisbig River is covered with a good growth of timber, and it is said that the new company will probably apply for timber concessions in connection with its coal-mining project. The local promoters say that $1,800,000 capital from Boise City and Seattle is to back the new enterprise.

Tayeh Iron Mines:—The Ministry of Agriculture and Commerce is proposing to make the Tayeh Iron Mine into a State Company. The Directors of the Han-yen-ping Iron and Steelworks will be asked to attend a discussion of the matter in the capital. The

Ministry has asked the President to sanction the opening of the coal and iron mines in China.

Shantung Mines:—A party of officials of Fushun Collieries, including Mr. S. Sakaguchi, Assistant Manager, Mr. N. Tajima, etc.. sent to Shantung at the instance of the War Office, Tokyo, visited in turns the collieries at Poshan, Hungshan and Chinlingchen. They took up preparations for operating these mines. As in the case of the locomotives, etc., essential parts of the machinery under installation have been removed by the Germans and cannot be found. It will take some little time to replace the missing parts so as to make the machinery serviceable. Necessary appliances are to be furnished for the immediate purpose by Fushun Collieries. A gang of workmen was also sent to Shantung a few days ago.

RIVERS AND HABORS IRRIGATION

Mr. Chang Chien and the Hwai River Conservancy:—The Minister of Industry Commerce and Agriculture, Mr. Chang Chien in still making persistent efforts to resign, and it would seem that the President is as strenuously endeavouring to prevent him doing so.

When the Minister recently went south it was expected that he would contrive to cast off the toils of Ministerial work, which keep him confined to Peking, and devote himself to the Irrigation Bureau, through which he hopes to control any work that may be done in connection with the Huai River conservation scheme.

President Yuan Shih-kai states this morning in a eulogistic mandate that Chang Chien is too valuable a man to be allowed out of the Government service, and remarking that he looks upon him as a model for all officials. The President gently refuses to accept his resignation, though he softens the refusal by laying it down that the Minister of Industry, Commerce and Agriculture should be allowed a free leg to travel about the country. This ought to suit Mr Chang, who prides himself upon his multifarious interests.

Speaking of the Huai River brings to mind a little story that went the rounds recently to the effect that Mr. Chang Chien had a scheme of conservation of his own which he deemed much better than that prepared by the experts, and which he wished to have adopted.

The story goes that, when this became known in America a notification was promptly made that unless the plans of the experts were adopted no money would be forthcoming from the United States for the work. Mr. Chang Chien knows that his Irrigation Bureau is not in a position to do anything without money, and he very expeditiously packed his scheme away in his portfolio and now has eyes for nothing but those of Colonel Siebert.

Liao River Improvement:—With reference to the scheme for the improvement of the Liao River, H.M. Minister at Peking reports that, after prolonged and tedious negotiations extending over a period of nearly four years, an agreement has now been drawn up between the superintendent of Customs at Newchwang, as representing the Manchurian Government, and the Consular body at Newchwang, as representing their respective Governments, regarding the constitution and powers of the Liao River and Bar Conservancy Board. The works contemplated under this agreement compose the dredging of the bar at the mouth of the Liao River, the improvement of the river channel from there to the Newchwang Harbour and the closing of the Junk Channel, and also the protection and strengthening of the narrow strip of land between Duck Island and the lower limit of the harbour, in order to prevent a possible breach by the waters of the Liao River. This work can not be begun until next spring.

The Yellow River:—Mr. Hsu Shih-kwang, who was recently appointed to direct the repairs of the banks of the Yellow River which were burst, has delegated a number of officials to make an inspection of the damage done to the banks. From the reports of his officials he estimates that something like $6,000,000 will be needed. As the Ministry of Finance is not in a position to make such a big appropriation, the President has instructed the authorities of Chihli, Honan and Shantung to give $3,000,000 or $1,000,000 for each province. As to the other $3,000,000, the Ministry of Finance will try its best to raise it itself.

China's Conservancy Works:—The announcement that the work of dredging the North Canal had commenced at the beginning of this month and that an office to arrange for the dredging of the Yungting River was to be established by the middle of this month is an interesting one at the present time in view of China's attitude to the subject of national conservancy. As is known, a Dutch engineer, Mr. Van der Veen, has been engaged as expert adviser to the National Conservancy Bureau, and his recommendation, with which Mr. Chang Chien, the Minister of Agriculture and Commerce, is in agreement, is that conservancy should be considered in a comprehensive manner and that local schemes should not be attempted but should be subordinated to the plans of a large national system. For instance, it has been suggested that the Grand Canal, which has been allowed to silt since the carrying of tribute rice from Tientsin to Peking on its waters was discontinued, should be rendered navigable by dredging, but a practical view of the subject tends to show that if this were done the operation would probably have to be renewed the very next year as the flooding of the Yi River would bring about conditions similar to those which exist at present. This argument still applies. However, there are exceptions to this general principle, and the joint undertaking under notice comes under that category. It is not planned in order to improve the waterway as a means of communication or to facilitate transportation but it is planned to improve the lot of the people who unhappily live in a district which is liable to be flooded by the overflowing of the canal and the river owing to the heavy spring rains. Much suffering was caused in that part of Chihli during the early part of the present year when thousands of acres of land were submerged, and the Governor of Chingchao is entitled to every credit for his forethought and courage in commencing such a necessary enterprise, especially so when money is scarce. The waters will be controlled in time and made subservient to the needs of the district rather than allowed to become a tyrant which works incalculable damage and destruction, so that in the long run it will be found that the money expended was a capital investment yielding a greater return than can be calculated in hard cash. It is not stated in the report from which source the necessary money is being derived, but it is to be hoped that there will be no financial obstacles to completing the work and thereby reducing the number of "China's Sorrows."

Hongkong's Water Supply:—The water return issued by the Water Authority detailing the storage of water in the reservoirs on the 1st November shows that at the end of October the storage in the City and Hill district water works level was 716.71 million gallons, compared with 684.49 million gallons at the end of October last year. The consumption of water was 166.65 million gallons by an estimated population of 258.919, showing an average consumption per head per day of 20.7 gallons, compared with a consumption of 176.37 million gallons by an estimated population of 255.319 and an average consumption of 22.3 per head per day in the similar period of 1913. There was a constant supply in all districts during October in both 1914 and 1913.

The storage in million gallons in Kowloon Gravitation Reservoir was 352.50, about 19 million gallons less than at the end of October, 1913. The total consumption in Kowloon by an estimated population of 95,300 was 36.10 million gallons, showing an average consumption per head per day of 12.2, compared with a consumption of 34.92 million gallons by an estimated population f93,500 in October, 10.

Kweichow River Improvement:—The new governor of Kweichow Province, has decided to take in hand the improvement of the waterways of the district. The P'an River, which reaches as far as Wuchow in Kwangsi, is, like several other waterways in the locality, too shallow for purposes of navigation. He has investigated the question and reports that a sum of at least $300,000 will be required to dredge the river named. Several million dollars will be needed if other rivers are also to be improved, but at the moment attention will be concentrated on the P'an River, and if the results are satisfactory the others will be dealt with in due course.

Matheson Lock Joint Pipe:—Messrs. Germann & Co. Ltd., the well known engineers and contractors of Manila, were awarded the contract for furnishing 10,400 meters of 5½ inch diameter special lap welded steel tubes fitted with Matheson patent lock joints to the Vigan waterworks for the sum of P.28,150.

Irrigation Pumps, Yunnan:—The Yunnan correspondent of the *North-China Daily News* states that a British merchant from Hongkong secured a contract for an irrigating pump with the prospect of others to follow.

Cost of Relief from Floods:—It is said that the floods and other natural calamities for this year will cost the Ministry of Finance something like $1,237,200. The Ministry has thus far spent $278,000 for the relief work, and, the amount of revenue which it cannot collect on account of floods and the like is approximately $959,200.

Yangtsze Conservancy:—The "Sin-wanpao" reports:—The Conservancy Board has decided to dredge the Yangtse from Chinkiang to the sea, and engineers and secretaries have been detailed to study the actual conditions.

Liao River:—Mr. Chen-chihchien, Inspector of the Customs, Newchwang, has been relieved of his additional post of the superintendent of the Dredging of the Liao. This post has been additionally invested in Mr. Yung-hou, District Superintendent of the Liao-Shen District.

Fomosan Harbor Works:—One of the most important public works now being carried on by the Taiwan Government is the improvement of the harbor at its principal port, Keeling, at the extreme northern end of the island, through which passes more than half of the shipping. The new work includes large warehouses of steel and of reinforced concrete; a sea wall, for protection against the destructive typhoons, is to be lengthened some 14,000 feet; twenty-one mooring buoys are to be placed; and eight cranes of 1½ and 10 tons are to be added to the equipment. Improvements of the same general nature are also being carried on at Takao, Tansing and Tamsui.

Irrigation Works in Siam:—The Siamese budget estimates for the fiscal year 1914—15 provide $362,230 for establishing a regular irrigation department and for purchasing part of the necessary plant.

A grant of $37,080 was made for 1913—14 for irrigation studies, which have been carried on

during the year by expert engineers lent by the British-India Government, assisted by a locally engaged staff.

The final project has not yet been completed, but it has been definitely decided to carry out an irrigation scheme without delay, the aim being to provide irrigation facilities for the chief rice-growing districts of the inner circles (Monthons) of the Kingdom. The funds for this project will be met through loan and reserve funds.

ELECTRIC LIGHT & POWER

Peking Tramways:—Extracted from the Report of the Municipal Administration of Peking. (As these reports are for the perusal of the general public, they are written in conversational Mandarin.)

In order to introduce municipal reforms into the Capital, the first important measure is to build a tramway so as to facilitate traffic. The plan for building a tramway was once approved but nothing has been done. This is due to the fact that the Tramway Company violated the contract and the Government then cancelled its charter. Subsequently after the organisation of the Municipal Council, the latter thought of the building of the tramway. By that time people held various opinions about it. Those who seconded the plan expected to see the complete construction of the tramway within a few months. The conservative class, fearing the destruction of a certain number of official and private buildings in order to make room for the projected line, invented various rumours to frustrate it.

The Council's plan for building a tramway can never be frustrated in this way as it has been busily engaged in this project. The delay is due first to its importance and the Council deems it advisable to give due consideration before it is carried into effect. Secondly the Council desires to inform the public of the beneficial effects of the tramway so the fear once entertained will subside. On the 27th and 28th of August and the 1st of September the Council made a clear explanation of its plan for building the tramway and the advantages which will accrue therefrom in its Municipal Report. Since then the conservative elements have withdrawn their opposition. At the end of October, the local papers in Peking published news to the effect that a certain Capitalist expressed surprise at the indifference of the Government in making plans to facilitate traffic in the Capital. The papers further said that it was strange to see the recent inactivity of the Municipal Council in carrying out its project in building a tramway in the Capital, etc.

Such criticisms serve to show the conservative class that the building of the tramway in the Capital is not planned by only a minority of the people but that it is generally supported. But what the Council wants to add is that those who made such criticisms have not read the notices referred to above. In short, the building of the tramway in the Capital will be carried out sooner or later. Those who expect it may wait and see its early completion, while those who oppose this campaign need not work against it.

Peking Electric Light Co.:—It is reported that the Peking Electric Light Company has obtained an increase of capital to the extent of $750,000. Of this amount nearly a half is to be expended in extension work of various descriptions.

Manchuria Electricity Co.:—The Manchuria Electricity Company received up to November 1st, subscriptions to about 1,600 lamps at Kaiyuan. The work of installation there progressed so far as to enable the management to make a trial illumination every night. The Government inspection of the installation was conducted on October 23rd and the result was satisfactory. The Government Regulations require the complete installation of a spare generator, etc., before an official permission is given for opening business. The management has however, asked for permission to begin business unofficially pending the fulfilment of the above requirement, and it is probable that the request will be complied with.

The difficulties between the management and the intending subscribers at Kaiyuan were smoothed over by a compromise plan that the monthly contract rate per lamp of 16 candle-power be reduced by 5 sen to Y1.35 instead of to Y1.30 as asked for, subject to reduction to Y1.30 when the number of lamps subscribed to reaches 3,000, and that, in the case of all subscriptions up to November 30th, no fees be charged for wiring installation as a mark of special courtesy, and that no charges be made for removing the installation. The installation of meters has been put within access of any subscriber using more than 20 lamps. This compromise was proposed by the management to intending consumers. President Gonta, Managing Director Suzuki, Directors Okabe (M. P.), Seki, etc., represent the Company. This compromise was accepted without reserve.

Hydroelectric Power Development, P. I.:—The Manila Power Co., a Connecticut corporation, has just obtained permission to do business in the Philippines. The company is incorporated for $1,000,000 and is understood to be about to take over the Caliraya water right granted by the last legislature to Charles M. Swift. The corporation is authorized to organize and operate hydroelectric power plants, to dispose of electric current, to acquire water rights, and to engage in other similar activities within the Philippine Islands. The incorporation papers were filed in Hartford, Conn., and the incorporators were Arthur L. Shipman, William Waldo Hyde, and A. W. Hyde.

Shanghai Municipal Plant:—The Municipal Electrical Engineer in his last report states that good progress has been made with the extension work at the Riverside station. The four boilers are nearing completion. The first 5,000 K. W. turbo-alternator has already been on load for a short period. With the temporary steam pipe connections it has been possible to get 4,000 K. W. output from the machine. This may be regarded as satisfactory inasmuch as it provides additional reserve of generating plant although until the boilers are ready—and their availability for service is dependent upon the erection of the delayed main pipework just arrived—the total capacity of the power house will not be appreciably increased.

TRADE NOTES

Japan's Machinery Imports.—The report on the trade of Japan for the year 1913 by Mr. E. F. Crowe, Commercial Attache to His Majesty's Embassy, Tokyo, states with regard to the imports of machinery:—

The figures for the machinery are very high and easily beat all previous records, the total amounting to £3,752,700, as compared with £2,987,600, in 1912, or an increase of 22 per cent. To a certain extent, however, these returns are misleading, because instead of representing activity during 1913 they should be taken as indications of the optimistic feeling which prevailed as to the future in 1911, inasmuch as a large portion of the machinery arriving last year was ordered more than 12 months ago. At present there is a comparative cessation of new works and of development of existing factories, so that the outlook for the next year or two is not very bright. As was anticipated in last year's report, a great deal of the cotton spinning machinery, which had been delayed for various reasons and could not be shipped in 1912, came forward in the course of the past 12 months, with the result that this item once more easily takes its place at the head of the table. The following table shows the shares in the line of business which fell to the principal countries during the last three years:—

Country	1911. £
United Kingdom	1,260,600
United States	644,600
Germany	674,300
France	18,500
Other countries	211,000
Total	2,818,000

Country	1912. £
United Kingdom	1,456,300
United States	705,600
Germany	658,900
France	18,500
Other countries	148,300
Total	2,987,600

Country	1913. £
United Kingdom	1,737,800
United States	754,300
Germany	873,600
France	24,700
Other countries	362,300
Total	3,752,700

It will be seen that the United Kingdom remains well at the head of the list, but her share has not advanced as much as that of Germany, the rates of increase being 19 and 33 per cent. respectively. It is cotton spinning machinery, an advance from £144,000 to £491,000, which is largely accountable for the gain made by the United Kingdom, while the growth in the sales of German machinery is more general, but is chiefly ascribable to electric machinery. In looms and tissue finishing machines both countries registered considerable gains—the United Kingdom from £61,000 to £106,000 and Germany from £23,000 to £41,000. On the other hand, in the case of machine tools, the United Kingdom, United States, and Germany, which share the trade between them, all suffered large losses. Germany retained her commanding position in the supply of water turbines, and she was successful in obtaining important orders for some large cranes and two or three big gas engines. This meant that compared with 1912 Germany showed an important advance.

Although Japan still imports machinery in such large quantities, it is interesting to note that there has been solid development on the part of Japanese machinery makers. In the case of gas plant for lighting and power it has been quite remarkable. They are making suction producers, gas engines, retort furnaces, and are building complete gas works. Practically all the appliances required by gas companies are now made in Japan, including meters, stoves, burners, lamps, glassware, mantles, &c. The above are being produced by a number of factories on a very large scale. They are somewhat inferior, lighter, and cheaper than imported goods, but they suit the market, and the cost of freight and duty make it quite impossible for foreign goods to compete.

FINANCIAL

Maintaining China's Credit:—The coupons of the Imperial Chinese Government Five Per Cent. Tientsin-Pukow Railway Supplementary Loan due on November 1st were paid on and after November 2 at the Hongkong and Shanghai Bank, London, as were also the unredeemed bonds and coupons of the Chinese Imperial Government Seven Per Cent. Silver Loan of 1894 due on Nov. 1.

Government Banks in Chosen:—The business of the Bank of Chosen (Korea), the Japanese Government bank at Seoul, for the half year ending June 30, 1914, showed a gross profit for all the branches of $208,031, with losses of $9,165, leaving a net profit of $198,-866. The latter figure shows an increase of $87,770 as against the figures for the corresponding period of 1913. With the increased profits for disposal it has been decided to submit to the shareholders at the next meeting a proposal to increase the rate of dividends from 6 to 7 per cent, this dividend to be paid also on the shares held by the Government. It will be the first time since the organization of the bank in 1909 that a dividend has been paid on the Government shares, which amount to $1,500,000 out of a total capital of $5,000,000.

Bank of Territorial Development:—A new Chinese bank with bright prospects, the Bank of Territorial Development of China, Ltd. 33 Nanking Road, opened for business in Shanghai on Monday, December 7.

The authorized capital of the Bank is $20,000,-000 of which half has been duly subscribed while the fully paid up amount stands to-day at $2,000,000. The Bank has recently elected a very strong board of directors and officers in Peking.

Although a purely Chinese concern, controlled and subscribed by Chinese, the Bank has been modeled along foreign lines.

The Bank does every description of banking business, buys, sells and receives for collection bills of exchange, issues letters of credit on its branches and agencies and grants loans on approved securities of personal and real properties.

Within a few weeks time, the bank expects to perfect all arrangements with correspondents in America, Europe, Australia, Italy, France, Germany, Canada, India, etc., and every facility to foreign firms will be granted to developing trade and commerce in China.

Invitations are being sent out for a reception to be held on December 7. Some of the directors and officers from Peking are expected to arrive here for the opening day for which efforts are being made to make it worthy of the occasion.

The local Manager and Sub-Manager are; Messrs. C. T. Hsu and Yushu Chin, respectively.

New Salt Bank:—The Government has decided to establish a Salt Industrial Bank, with branches in every province. The Director General is to be Chang Chen Shang.

A Russo-Mongolian Loan:—The *Shun Tien Shih Pao* heard that the Urga Government has concluded a loan of three million Roubles with Russia. One month after the signing of the agreement, the Russian Government will deliver every month $500,000 Roubles and all the money is to be handed over to the Urga Government in six months. It is definitely stipulated that with this money the Mongolian Government is to reform its finance, promote industry, open mines and reorganize the army. Before the use of the proceeds of the loan, the Urga Government however must consult the Russian representative whose consent is necessary prior to the expending of the money. It is said that the Russian Government charges no interest for the money.

Government Load to Aid Silk Filatures:—The Chinese Government, as a result of repeated request by the Hon. Yang Tcheng, has advanced Tls. 590,000 for the maintenance of the silk filatures in Shanghai. This sum is to be paid through the Bank of China and the General Bank of Communications. The filatures which are to receive assistance must present their cases to the Silk Guild, the committee of which will convey same to the Chamber of Commerce. The Chamber is responsible for the distribution of the funds. An arrangement has been arrived at whereby the Government will be enabled to get back its money. Upon exportation, Tls. 15 will be collected on every picul in addition to Customs duties.

Canton Gambling Monopoly:—Canton, Dec. 4. The Kwanglee Syndicate has obtained a gambling monopoly for three years. The Government revenue will be $4,200,000 annually. The Syndicate will purchase paper from a Government mill to the value of $10,000 monthly.

Gambling will be by Shanpiao and Paopiao lotteries.

It is provided that Shanpiao tickets be from 5 to 20 cent each and Paopiao tickets at any sum not exceeding $10.—Reuter.

The Siam Commercial Bank:—The 3,000,000 Ticals new Capital (30,000 shares of 100 ticals each) raised by the Siam Commercial Bank in accordance with special resolution recently passed has been fully subscribed. 20,321 shares has been taken up by old shareholders, the balance 9,679 shares has been taken up by 85 new shareholders. Up to the present only the first call of 25% has been made.

Banks in China:—As a result of investigation the Ministry of Finance has discovered that there are more than two hundred banks in Kirin, ninety-six banks in Hunan and forty-three banks in Szechuan. It is the intention of the President to compile a list in which will be recorded the number of private banks in every province, and other details about various financial institution from their beginning up to the present time. The President has ordered the Ministry of Finance to secure necessary banking information from the different provinces without delay.

Paper Money in China:—The amount of paper notes in circulation in China was approximately estimated at 140,000,000 dollars. Recent official returns made to the Central Government by the various provinces under its instruction, however, give the following:—

	Amount issued	Market Value	Discounted Value
Hupeh	$ 30,000,000	Less 20%	$ 24,000,000
Hunan	36,000,000	,, 44%	14,960,000
Kwangtung	32,000,000	,, 40%	19,200,000
Kwangsi	3,000,000	10%	2,700,000
Kiangsi	8,000,000	,, 33%	5,360,000
Yunnan and Kueichow	4,000,000	,, 30%	2,800,000
Ili and Hsinkiang	7,000,000	,, 20%	5,600,000
Shensi and Kansu	7,000,000	,, 10%	6,300,000
Anhui	780,000	At per	780,000
Honan	2,200,000	,,	2,200,000
Shansi	720,000	,,	720,000
Three Eastern Provinces	34,650,157	Less 38%	21,483,097
Shantung	4,800,000	At par	4,800,000
Chekiang	2,439,000	Less 10%	2,195,100
Fukien	300,000	At par	300,000
Jehol	15,000	,,	15,000
Chihli	6,400	,,	6,400
Total	162,910,557		113,419,597

Ningpo Bank Defies Order:—Sometime ago the Ministry of Finance issued orders to the Chiefs of Finance Bureaux of the various provinces to make reports of the Government on the private banks in their respective provinces. The Government has now received nearly all such reports except that of the Ningpo Bank 四明銀行 at Shanghai, which despite the order of the Ministry and the Kiangsu financial authorities has declined to give any report concerning the organisation so other details of the said bank as required by the Ministry of Finance. The Government learns that the bank in question being established in the Shanghai Foreign Settlement defies the orders of the Ministry by shielding itself behind foreign jurisdiction. It is said that steps will be taken through diplomatic channels for punishing the officials of the said bank who are responsible for delaying the Government's orders.

Reported Japanese Loan:—For the purpose of paying old debts the *Peking Daily News* learns that the provincial government of Fengtien has obtained permission from the Central Government to raise a loan from a certain Japanese syndicate. The agreement for the said loan will be signed on the 20th inst. and its essential points are as follows:

1. The total amount of the said loan shall be 1,500,000 yen. 2. The annual interest shall be 8 per cent. 3. The periods of its redemption shall be one year. 4. The proceeds of the said loan shall be devoted to the repayment of one million yen of an old debt due to the Japanese and its interest in arrears. After paying off the above two items, the remainder shall be for the use of the Fengtien provincial government. 5. The loan shall be secured on the government shares of the Yalu Lumbering Company and those of the Pen-chi-hu Iron and Coal Company, and also the proceeds from the mining tax of the Fu-cheng Coal Mine shall be used as security of the interest of the said loan. 6. The proceeds of the loan shall be paid to the Chinese officials ten days after the formal signature of the loan agreement.

Bank of Hunan:—In order to effect a thorough reorganisation of the Hunan Bank, the Ministry of Finance has decided to carry out the following three measures:—

(1) The bank should be so reorganised as to make it a thoroughly up-to-date one.

(2) Certain restrictions should be imposed upon the number of currency notes it issues in order to prevent the occurrence of any financial crises:—

(3) More specie should be reserved in the Bank so as to relieve the stringency of the financial market.

SHIPPING, SHIPBUILDING, DOCKYARDS, ETC.

Japanese Shipping Subsidies:—The Japanese Communications Department, has sent to the Financial Department an estimate of shipping subsidies for the year, in the form proposed by the last Cabinet. As a result of the debate on the Estimates at a Cabinet Council, the estimate for the Panama Canal service has been struck off, as it was decided not to open the service this year. The Department of Communications warmly urged the opening of the service this year, but the financial position being such that even an extension of the telephone service, which brings in additional revenue, is not to be allowed, the Cabinet considered the present was not an opportune time for opening the Panama service.

Subsidies for Tsingtau and South Seas:—The Osaka Shosen Kaisha has recently opened negotiations with the Department of Communications and the War Office about

opening a new line between Kobe and Tsingtau with two steamers of 400 tons class which will be run twice a week. A reply from the Department of Communications says that Tsingtau is at present under the administration of the army and besides there is no budget for the extraordinary subsidies. But from the next fiscal year the government will give subsidies for both South Sea and Tsingtau lines so that the steamship company will commence the Tsingtau line when Kiaochow Bay is opened by the military authorities.

New N. Y. K. Steamer:—The following are the dimensions of the new N. Y. K. cargo steamer *Toyooka Maru* which was launched at Nagasaki on October 29:—

Length 45ft., breadth 58ft., depth 34ft., gross tonnage 7,630 tons, horse-power 5,800. Boiler—Four, single-ended cylindrical. Engines—Two Parson's geared turbines. Speed—14 knots.

Space is provided in five holds for 12,000 tons measurement cargo. For handling this fourteen winches will be fitted and a special 30-ton crane.

Although not a passenger steamer, four two-berth cabins will be provided for first-class passengers.

A sister ship to the *Toyooka Maru* is also being built by the Mitsu Bishi Dockyard and will be propelled by similar geared turbines. These two ships and the *Anyo Maru*, also built at Nagasaki, are the only Japanese vessels fitted with this form of propulsion.

Steam Line to Borneo:—A line of steamships has been established to ply between Kudat, British North Borneo, and the island of Palawan in the Philippine Group. Palawan lies somewhat out of the line of interisland trade and few vessels from Manila touch at ports of the island. The first North Borneo steamer of the new line to arrive recently made the initial voyage. The vessels are under charter of Chinese traders from North Borneo. The vessel carried to Balabac, Palawan, a mixed trading cargo worth about $5,000 and carried back to Borneo about $6,000 worth of Palawan products, consisting of $3,600 worth of almaciga, a resin very valuable for varnishes; pearl button shells worth $1,245; beche de mer worth $185, and bejuco (Philippine rattan) worth $450. The bejuco is sold in the Singapore market as the Borneo bejuco and commands a high price.

New Mitsu Bishi Dock:—The Mitsu Bishi Company's dry dock at Hikoshima, an island in the Shimonoseki Straits, was opened with due ceremony on the 1st December.

Pearl Harbour's Naval Dry-Dock:—Washington, Dec. 4, 1914. A contract has been signed for the completion of the naval dry-dock at Pearl Harbour, in Hawaii, on which work has been discontinued for two years.—Reuter.

Icebreakers:—The two icebreakers "Marksman" and "Engineer," which were built for the Russian Government by the Kiangnan Dock, arrived safely at Vladivostock, under their own steam, November 15, after a boisterous passage during which the little vessels behaved splendidly.

BUILDING

New Masonic Temple, Manila:—Bids for the construction of the Masonic temple, which when completed will be one of the largest and most beautiful buildings in Manila, were opened October 24th.

The bids were as follows.

J. A. Ainsworth	P. 538,000
Patstone & Merritt	481,684
Mr. Caronna	454,150
Tan Samco	443,009
S. C. Choy & Co....	499,700
F. S. Harris	525,000
Mr. Buck of Iloilo, (not including structural steel)	339,992

The plans for the building were drawn by the present consulting architect, George C. Fenhagen.

The building will be of five stories. The first or ground floor will be used for stores, the second and third floor for offices, and the fourth and fifth floors for headquarters of the various Masonic lodges and organizations. The site of the building is that previously occupied by the old "English hotel" on the Escolta, between the present English drug store and Alkan's establishment, from 76 to 100 Escolta.

The site was purchased two years ago from Consuelo Roxas for P200,000. The money for the building was partially raised by the issuance of bonds which were taken up by individual Masons and by the various Masonic organizations. Should the amount thus raised not suffice for the purpose, the intention is to negotiate a loan to make up the difference. It is expected that construction will begin in the near future, soon after the bids are awarded.

Peking Buildings.—So far as the building trade is concerned in the Capital there is no indication of hard times or a belief that business is likely to remain long in its present unsatisfactory state. Operations are being rushed on most of the new structures, the idea, of course, being to complete the actual brick and stone work before frost puts a stop to all outside work of this description. The Banque de l'Indo-Chine has made rapid progress since the summer and the stone work is nearly completed. Not so with the Chartered Bank opposite the American Legation. It will probably have to remain in the unfinished stage during the winter months. The new Peking Hotel gives promise of being open at an early date. New blocks are going up in the business centre of the city, and Peking is every day becoming very different to the ancient and secluded city of fifteen years ago.

New Treasury Building, Peking.—According to the *Asia Ah Pao*, the Office of the Ministry of Finance will before long be removed to the new building near the North Lake if the Ministry can make the Hugo Leu Company complete the contract within the time limit.

The building which the Ministry of Finance now occupies was formerly the Yamen of the Board of Revenue, but it has been mortgaged to the Banque Industrielle de Chine. In view of the poor condition of the premises, which are not worth repairing, the Minister has selected the old Yamen of Luanyiwei or the Bureau of Imperial Attendents as the site for the new building of the Ministry of Finance. Some time ago, a contract was concluded with the Hugo Leu Company for the new building of the office for $250,000. It has been stipulated that the building would be equipped with all modern conveniences, such as the steam pipes, and that materials of the best quality would be imported from Germany. On account of the war, as the material was detained or could not be sent to China, the German firm was obliged to postpone the beginning of the work, but the Ministry of Finance has been insisting upon the company commencing in accordance with the contract. It is expected that the premises may be completed by the end of the year.

Siam, General Construction Work.—The Siamese budget for the fiscal year 1914 15 provides for the following construction work: A grant of $18,500 for an office for the Fine Arts Department, and $44,400 for the construction of a mausoleum for the statues of the Kings of the present dynasty. For the completion of the new audience hall, the construction of which was begun several years ago, $311,540 has been provided this year and $314,500 will be allotted in the budget for 1915—16. These allotments are to be met out of ordinary revenue of the Kingdom.

High School Building at Pasig, P. I.—The recommendation for the construction of a P55,000 high school building at Pasig, which was presented to the governor general some time ago by Dr. Angeles of the assembly, is again under consideration.

The suggestions made by the doctor to the chief executive would, if adopted, provide for an allotment of P25,000 from insular government funds. The provincial board of Rizal has already apportioned P30,000 for the construction of a provincial high school at Pasig.

PETROLEUM

Trade in Formosa:—More petroleum was produced in the first half of 1913 in the Island of Formosa (or Taiwan), than in any one whole calendar year previous to that. The quality of this oil is not very high, as it gives off too much smoke, but it can be used for various commercial purposes. Oil veins are numerous and are frequently found when excavations for tunnels, etc., are made. In 1913 a big well that flowed 2,400 gallons a day and spouted 110 feet—the largest on the island—was found near Byoritsu. The kerosene market is supplied by the Standard Oil Company of New York and the Rising Sun Petroleum Company. They meet with a great deal of trouble on account of adulteration of their goods. A cheap grade of oil is mixed with oil of a better quality and the mixture is then sold under the name of a better oil. This greatly harms the trade and it is hoped some way will be found to stop the practice. Kerosene imports for the past two years follow: American, 1912, $239,112, 1913, $242,990; Japan 1912, $112,442, 1913, $134,154; Dutch East Indies, 1912, $137,548, 1913, $215,892.

Japanese Oil Trade in 1913:—There was a slight decrease in imports to Japan in 1913 as compared with 1912. This was due to the increased output of Japanese wells and not to competition from other countries. The newly discovered wells would also indicate that a further decline in the kerosene import trade may be anticipated. The United States ranks first in the importation of benzine, illuminating oils, and paraffin wax. The importations of kerosene for 1912 and 1913 from the United States were; 1912, $4,517,724; 1913, $3,773,411. From the Dutch East Indies 1912, $1,674,000; 1913, $1,755,361.

The Shensi Oil Fields:—Mr. Hsiung Hsi-ling Chief Director of the National Oil Bureau, reports the safe arrival of the drilling machines and American Engineers at Yenchang, Shensi, on the 22nd October, and that the American experts are engaged in putting the machinery in order in the west suburb of Yenchang so that drilling will be commenced before the 10th inst. Mr. Hsiung adds that the weight of the machinery is over 1,700 Tons and owing to the bad condition of the roads, it took the Chinese officials fully six months to transport it to its destination. The second instalment of the drilling machines of the Standard Oil Company of New York will not be transported to Yenchang until next spring.

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INDUSTRIES

Hunan Copper Mint Abolished.—The Ministry of Finance is exerting its energy towards Currency Reform. Various necessary measures, such as suspension or limitation of output of copper coins and amalgamation of mints, throughout the provinces, have been successively enforced.

In view of the fact that the new currency is about to be put into circulation, the Ministry of Finance has, with the sanction of the President, ordered the abolition of the Hunan Mint, which was specially devoted to copper coinage in the province.

The abolition will result in a more uniform exchange between silver and copper coins.

Oil-Milling in Manchuria.—Although it is not generally known, very important and widespread commercial interests are involved in the developments which are now occurring in connection with the soya bean industry in the Far East. It was, of course, always inevitable that eventually Hull, Marseilles, and other great European oil-milling centres would have to share their monopoly with the Eastern countries and those British Colonies where the production of the raw material has been more or less extensively undertaken. Japan has characteristically led the way in establishing a milling industry, and is assured of success in view of the world's demand for vegetable oils being of such great and constant growth, always well in excess of the supplies available. Now a similar line of enterprise has been commenced in Manchuria, the original and principal source of supply of the soya bean, and, this once started, no one would venture to forecast the extent to which the oil-milling will develop in course of time, with unlimited supplies of raw material on the spot. For years the soya bean has been exported in huge quantities from both North and South Manchuria to Japan and Europe, where, by various processes, the invaluable product of bean-oil has been produced. It was only three years ago that Messrs. Lever Bros., Ltd., realising the enormous future in store for the oil secured from the Manchurian bean, in addition to their other ventures elsewhere, founded a mill at Kobe upon a very scientific basis. Since that time many mills have sprung up throughout Japan, which country's trade has undoubtedly benefited exceedingly by this new development. Now that a similar mill has been erected in the manufacturing and distributing town of Harbin, the chief commercial centre of North Manchuria, and the junction of the main line between Europe and Vladivostock, this step may be regarded as only the preliminary of a series of such enterprises throughout the length and breadth of China.

An Opening for Milling Machinery Manufacturers.—Following upon this development at Harbin, it is obvious that the agricultural pursuits of the Chinese will receive a necessary impetus, and the bean will be cultivated in still larger quantities than hitherto. An important consequence is that a new trade in milling machinery will be created, and now would seem to be an exceedingly opportune moment for a re-kindling of business relations between the English manufacturer and the Manchurian importer. In any case, a larger market for all kinds of implements and tools necessary to effect the successful working of the industry should be found available. It is true that, consequent upon the unsettled conditions prevailing during the year 1912, a very poor crop was produced in 1913, but, with a brighter outlook, the work of recuperation will be energetically pursued, with milling enterprise as an important factor, to the great stimulation of the general prosperity and trade of this somewhat neglected market. As we have suggested, the supplies of beans will probably be increased to meet the requirements of local mills without diminishing the exports, but at the same time Hull will do well to look more keenly to the possibilities of supply from such Colonies as South Africa, where the cultivation of oil products, including the soya bean, is already well under way and only lacks full organisation and direction.

Government Steel Plate Plant.—The installation of a plant for the production of thick plates of steel, to be completed in three years, the whole expenses estimated at 2,400,000 yen is provided for in the Japanese Government Budget for 1915, under the Department of Agriculture and Commerce.

New Woollen Mill in Himeji.—The opening ceremony of a new Kobe concern, the Japan Wool Spinning Co., was held at the mill at Himeji early in November and was attended by about 600 guests. The grounds of the mill cover 32,000 tsubo, the mill itself, a brick building, over 3,000 tsubo, and the number of spindles already installed is 18,900.

An Arsenal for Manchuria.—Some time ago when the Provincial Assembly was in session, one of its members moved a bill for the establishment of an Arsenal for the Three Eastern Provinces, but in view of the financial stringency, this question has been dropped. It is now learned that the Chiang Chun of Fengtien has suggested to the Government to the effect that there are above 100,000 regular troops and a large number of police in these provinces, whose supply of munitions depends entirely upon foreign sources and that since the outbreak of the European war the provincial authorities there have been no longer able to get munitions as regularly as before. In order to do away with this inconvenience, the Chiang Chun added, an arsenal should be established in a suitable place in Manchuria for these three provinces. As to the funds for carrying out such a project, the Chiang Chun further suggested that the provincial Government of the three provinces concerned shall be responsible for half of such funds while the other half should be raised by the Central Government.

The Teh Dah Cotton Mill, Shanghai.—A cotton spinning mill is being floated by Chinese merchants, the promoter being Mr. Moh Stang-yu, Ph.B., who has for the last six years studied the cotton industry in America. According to the prospectus, over fourteen mow of land will be available for Tls. 25,000; mill buildings, drainage, etc., Tls. 63,000; machinery, with 10,368 spindles and accessories, to cost Tls. 165,000 (half price to be paid first, the balance in six half-yearly instalments); water supply vessels and other outlay, 17,000; installation and labour, Tls. 3,000; and miscellaneous expenses, Tls. 10,000; cash capital required will be about Tls. 201,400 only. A very tempting estimate of profitable working is also given, something like 30 per cent. or more, it is thought, can be realized.

The promotors of the new concern are men of means and experience and several of them are actively engaged in the cotton trade. A company named Teh Dah Cotton Mill, Ltd., has been formed and will in due course be registered with the Ministry of Agriculture and Commerce. The capital, Tls. 300,000, divided into 3,000 shares of Tls. 100 each, has been fully subscribed, all by Chinese.

The site of the mill is located on Lay Road, close to the Yangtszepoo bridge. Electricity from the municipal main supply will be utilised for driving the motors. The mill will be fitted with automatic fire extinguishers.

Mr. Moh is very confident of the success of the new concern. He said that the Chinese cotton industry has failed not because of capital, but through bad management and lack of experience.

THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XI. SHANGHAI, MARCH, 1915 No. 10

THE STRUGGLE FOR THE MANCHURIAN RAILWAYS

A Precis of the Diplomatic and Military Combats leading to Japan's Dominance in South Manchuria

By securing from China the control and administration of the Kirin-Changchun Railway, an extension of the agreements governing the South Manchuria and Antung-Mukden Railways, as well as the refusal of foreign loans for railway purposes in South Manchuria, Japan has the satisfaction of knowing that she is now dominant in the country so far as railways are concerned even if she is eventually unable to extract from China the consent necessary to establish her overtly in a supremely favored position politically. In another article in this issue the progress of the negotiations which have been proceeding between Japan and China are specially dealt with. Here it is intended merely to refer to the railways concerned. They are interesting inasmuch as they have constituted the basis in the past of much international heart-burning, and, in fact, of strenuous and dramatic political wire-pulling. By now acquiring practical mastery of them Japan is able to write finis to a long and vicissitudinous chapter of Manchurian history, and some other nations may be able to shed a tear of poignant regret upon the grave of great ambitions. Statesmen of both Russia and America once entertained dreams of exercising considerable influence over the rich territory comprising the cradle of the Manchu race, but it seems that Destiny had marked it out that if any foreign Power should usurp the rights and prerogatives of the Chinese nation that Power should be Japan. And the Japanese people, too, have ever professed the belief, and laboured to materialise the belief, that they were the ones chosen to supervise, if not actually control, the development of the region. Their success against the arms of Russia was complacently accepted by them as Providential recognition of their title to a just heritage. Nor were the claims of China, the aeons of occupation by the Manchus, or the protestations of Occidental nations possessed of distinct treaty privileges permitted by the Japanese to stand in the way of the consummation of their plans to acquire a full and free ascendancy. They have worked steadily and well. Not even the severest critic will gainsay that; nor will the critic minimise the praise that is due them for improving the economic conditions wherever they have set to work to reform or develop them, malgre that the efforts have been bentt of avour Japan rather than to be made universally profitable.

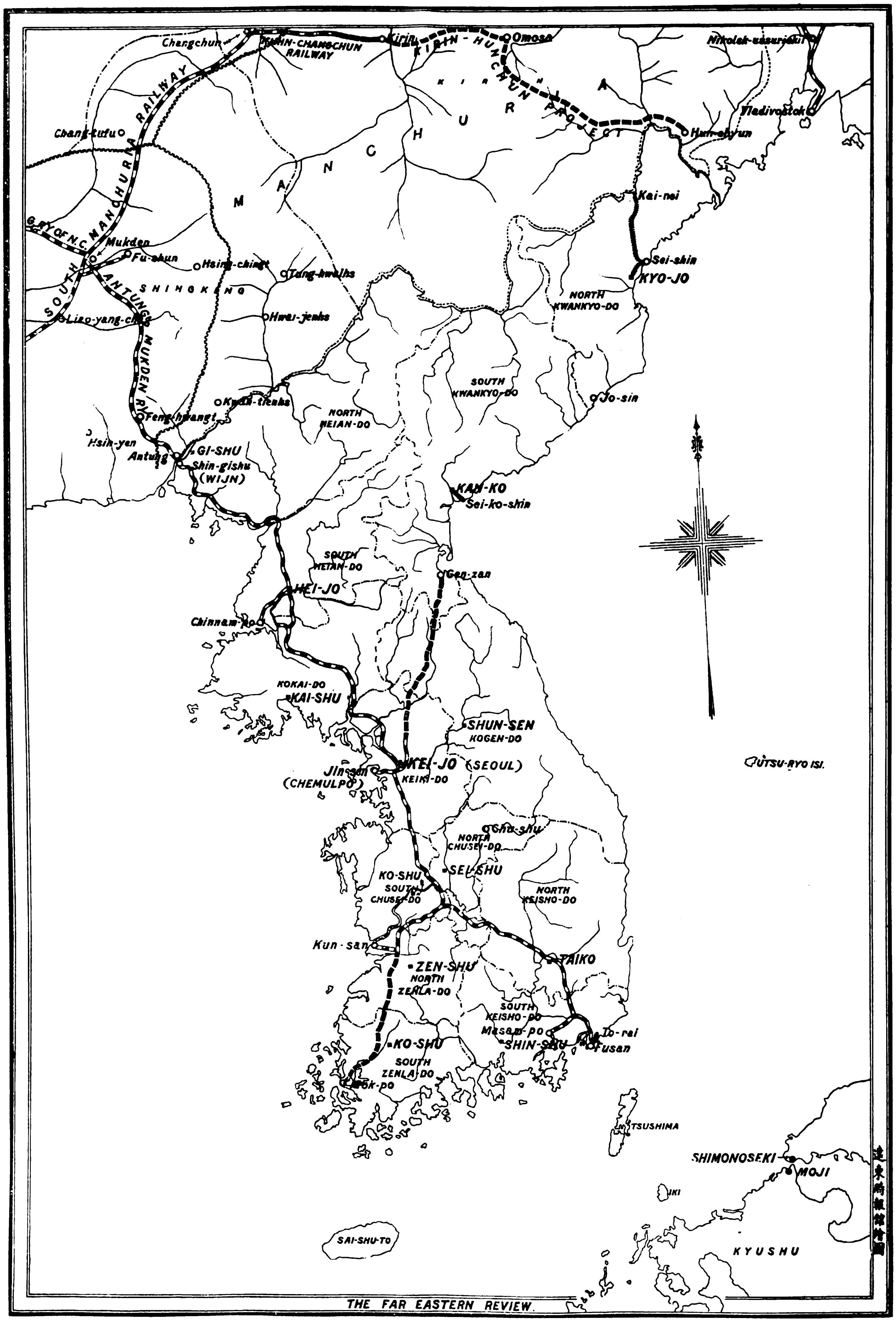
The doctrine of equal opportunity so readily affirmed by Japan has been subordinated to the needs of national ambition unwittingly or deliberately until writers like Mr. J. O. P. Bland are able with justification to lament that certain articles of the Treaty of Peace between Japan and Russia, the instrument whereby Japan received legal title to her inheritance of the leases of Port Arthur and Dalny and the immediate littoral, "possess only a melancholy retrospective interest to-day, having served merely to demonstrate the futility of Treaties that clash with the interests of the strong." Yet high Japanese publicists declare themselves able conscientiously to declare that Japan as a nation has taken no improper advantage of her influential position, and that she stands as one of the foremost exponents of the doctrine of the "open door" and the champion of the independence and integrity of China. Commercial men of other nationalities will, on the other hand, affirm that since Japan has secured control of the railways of Manchuria there has been unblushing discrimination against them, and on that count alone the opinion has grown, rightly or wrongly, that Japan's dominance in Manchuria is prone eventually to exacerbate large sections of the world's manufacturers desiring to participate in the markets of this region. It is, however, now possible for Japan arbitrarily to correct any of the wrong impressions that have gained a hold upon the minds of certain people, and if Japan does act so as to inspire confidence in her "open door" pledges there will be none among foreign nations who will begrudge her the pre-eminent position she has so laboriously acquired.

Entry and Exit of Japan.

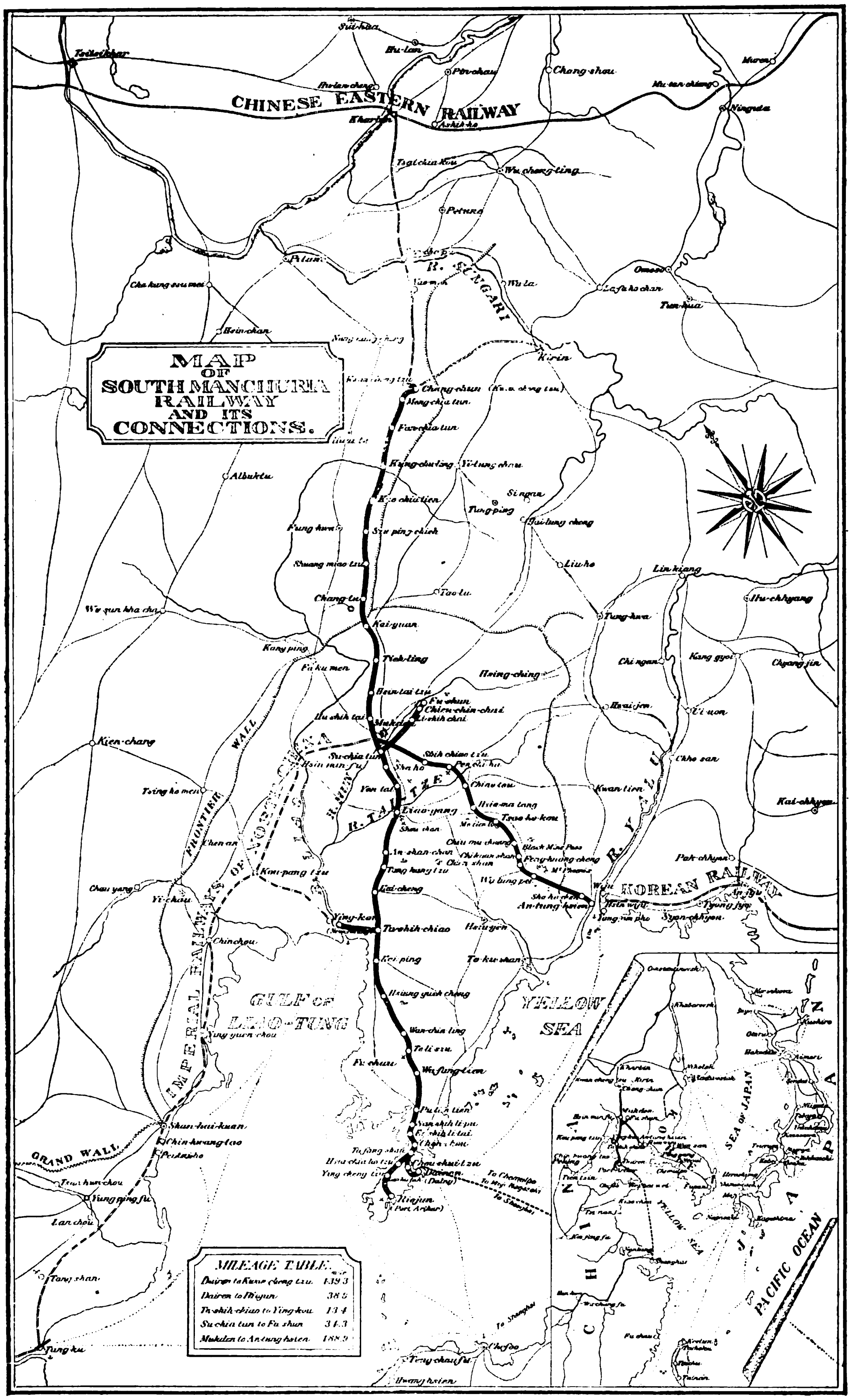
She will have succeeded where some of them have failed. Russia aimed at procuring for herself what Japan previously acquired, was prevented from holding, and now virtually possesses, but something of finesse was lacking in Russian diplomacy and the war with Japan was precipitated in 1904, ten years after the war which Japan victoriously conducted against China and by virtue of which she gained the southern portion of the province of Fengtien. In the Treaty of Shimonoseki, signed on April 17, 1895, China, among other things, ceded to Japan "in perpetuity and full sovereignty together with all fortifications, arsenals, and public property thereon":—

> The Southern portion of the Province of Fengtien within the following boundaries: The line of demarcation begins at the mouth of the river Yalu, and ascends that river to the mouth of the river Anping; from thence the line runs to Fenghuang; from thence to Haicheng; from thence to Yingkow (the port of Newchwang) forming a line which describes the southern portion of the territory. The places above named are included in the ceded territory. When the line reaches the river Liao at Yingkow it follows the course of that stream to its mouth where it terminates. The mid-channel of the river Liao shall be taken as the line of demarcation. This cession also includes all islands appertaining or belonging to the Province of Fengtien situated in the eastern portion of the Bay of Liaotung and in the northern part of the Yellow Sea.

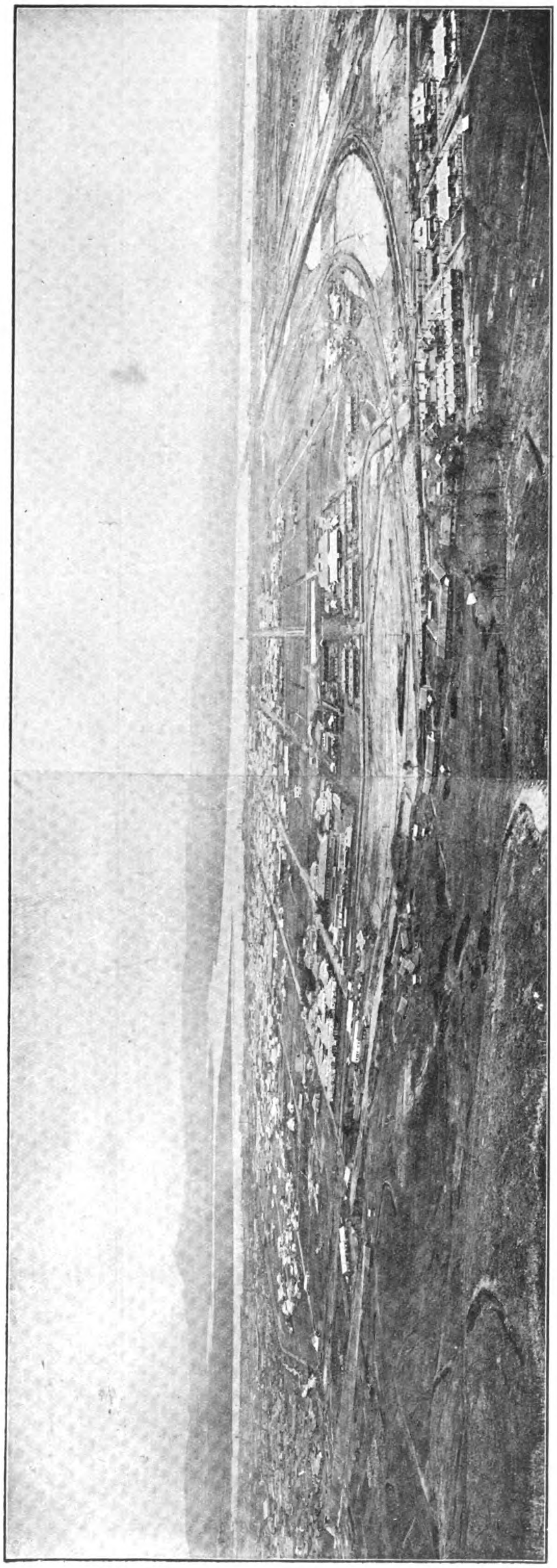
The territory thus ceded to Japan was the Liaotung Peninsula, the chief ports in the south being Port Arthur and Dalny, and believing that she would enjoy full and free possession



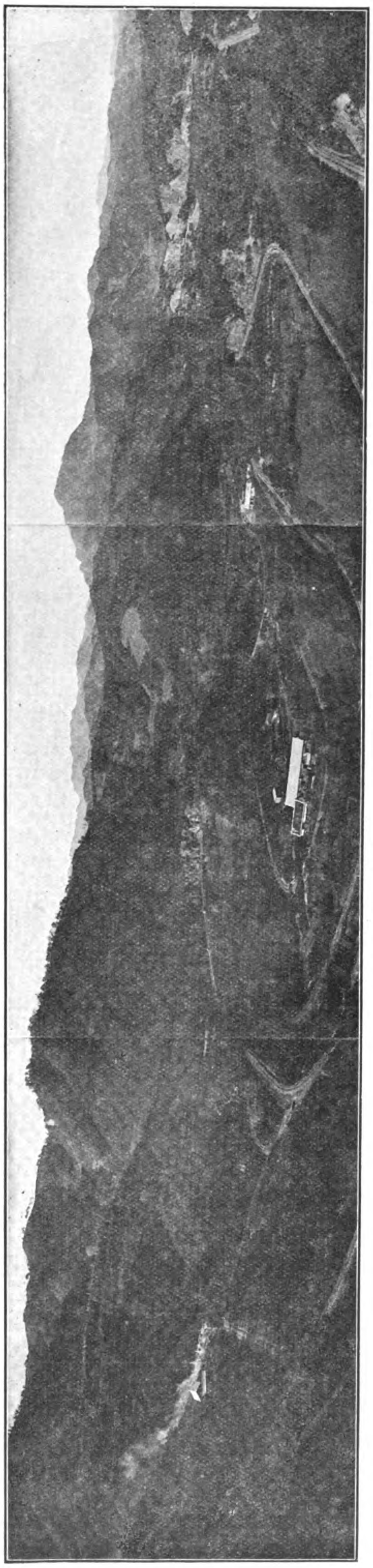
MAP SHOWING THE RELATION OF THE ANTUNG-MUKDEN, THE KIRIN-CHANGCHUN AND THE KOREAN RAILWAYS TO THE SOUTH MANCHURIA RAILWAY.



MAP OF SOUTH MANCHURIA SHOWING CONNECTIONS WITH CHINESE EASTERN AND KOREAN RAILWAYS AND THE CHINESE GOVERNMENT LINE FROM MUKDEN TO PEKING.



Panorama of Antung with the Yalu River in the distance.



The Antung-Mukden Railway—Black Mine Pass.

of legitimate spoils of war, she is not to be blamed for indulging in lavish thoughts of empire building. She reckoned without other Powers, however. Russia had distinct ambitions with regard to Manchuria, as it provided the way to an ice free port, and other nations had reasons for keeping Japan from settling there though they were willing enough that she should ultimately take Korea. Russia, Germany and France, therefore, combined to force Japan to relinquish her acquisition, and although the ratifications of the Shimonoseki Treaty were exchanged at Chefoo on May 8, 1895, Japan succumbed to the inducements of the nations mentioned and relinquished the ceded districts on the ground that their retention by Japan "would be detrimental to the lasting peace of the Orient." A Convention for the retrocession of Liaotung was consequently signed between China and Japan on November 8, 1895, the Chinese undertaking to pay 30,000,000 Kuping Taels before November 16, 1895. This was done, and by November 30 the evacuation of Manchuria by the Japanese was commenced, and was completed in December.

Russia and the Cassini Convention.

The Japanese were thus prevented from developing Manchuria as their prize of the war, and no sooner were they out of possession than Russian emissaries became active in laying foundations for the building of railways in Manchuria to connect the trans-Siberian system with the sea at Dalny and Port Arthur. Principal among these was Count Cassini, the Russian Minister at Peking, who, in 1896, is reputed to have secured an agreement with the Chinese Government for the building of the desired railways. Premature publication of the document—which was known as the Cassini Convention—and consequent excitement among other Powers led to denials of its existence both by Russia and by China. This Convention, however, opened the question definitely of a railway through Manchuria, and as a matter of historical interest the clauses dealing with railways may be quoted. The preamble sets out that the officials appointed to negotiate the convention were to consider certain matters concerning the connecting of the railway system of the Three Eastern Provinces (Fengtien, Kirin and Heilungkiang) with that of the Imperial Russian Railway in the Province of Siberia, with the object of facilitating the transport of goods between the two Empires, and of strengthening the frontier defences and sea-coasts; and furthermore to agree upon special privileges to be conceded by China to Russia as a response to the loyal aid given by Russia in the retrocession of Liaoyang and its dependencies. The articles of special interest were:

1.—Owing to the fact that the Russian Great Siberian Railway is on the point of completion, China consents to allow Russia to prolong her railway into Chinese territories (a) from the Russian Port of Vladivostock into the Chinese city of Hunchun, in the Province of Kirin, from thence northward to the Provincial capital of Kirin, and (b) from a railway station of some city in Siberia to the Chinese town of Aigun in Heilungkiang Province, from thence south-westward to the Provincial capital of Tsitsihar, and from thence to the town of Petune in Kirin Province, and from thence south-eastward to the Provincial Capital of Kirin.

2.—All railways built by Russia into the Chinese Provinces of Heilungkiang and Kirin shall be built at the sole expense of Russia and the regulations and buildings thereof shall be solely on the Russian system, with which China has nothing to do, and the entire control shall be in the hands of Russia for the space of thirty years. At the end of the said period China shall be allowed to prepare the necessary funds wherewith, after proper estimation of the value of the said railways, she shall redeem them, the rolling stock, machine shops, and buildings connected therewith. But as to how China will at that date redeem these railways shall be left for future consideration.

3.—China is now in the possession of a railway, which she intends to extend from Shanhaikwan into the Provincial Capital of Fengtien—namely Mukden (Shengking), and from Mukden to the Provincial Capital of Kirin. If China should hereafter find it convenient to build this road she shall allow Russia to provide the funds to build the railway from the city of Kirin on behalf of China, the redemption of which road shall be permissible to China at the end of ten years. With reference to the route to be taken by this railway, Russia shall follow the surveys already made by China in connection therewith, from Kirin to Mukden, Newchwang, etc.

4.—The railway to be built by China, beginning from Shanhaikwan, in Fengtien, to Newchwang, to Kaiping, to Chinchow, to Lushunkou (Port Arthur), and to Talienwan and their dependencies, shall follow the Russian railway regulations in order to facilitate the commercial intercourse between the respective Empires.

While the above articles are the only ones dealing with railway routes, others provide for railway guards, etc., and *en passant* it may be noted that provision is also made for Russia to lease the port of Kiaochau for fifteen years, and to assist China to fortify Port Arthur and Dalny, Russia to "lend all necessary assistance in helping to protect these two ports, and shall not permit any foreign power to encroach upon them." As has been mentioned, the signature of this Convention was denied by the Powers concerned in it, but that it was drawn up for signature if not actually signed, sealed and delivered, is regarded as certain by those who ought to know. Its suppression did not by any means deter or disturb Russia in the development of her designs to secure a railway through Manchuria, and balked in one direction she readily turned to another.

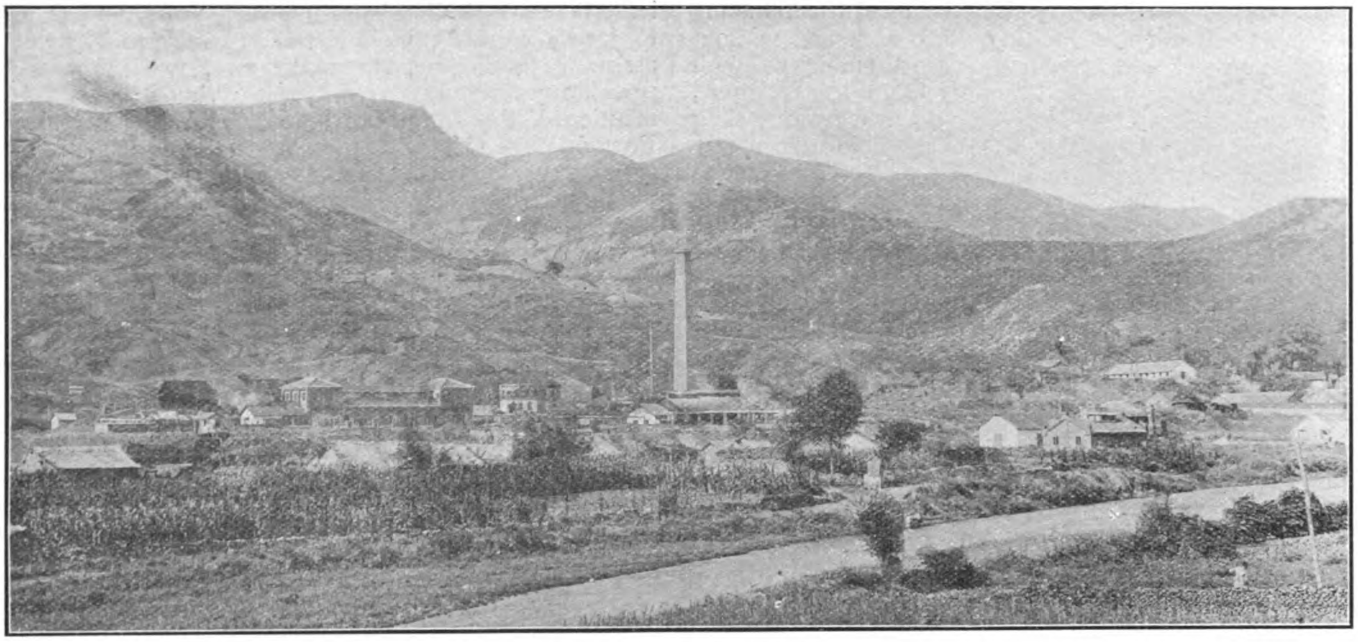
Birth of the Chinese Eastern Railway Co.

The representatives of the Russo-Asiatic Bank became active in negotiations with the Chinese and on September 8, 1896, concluded an agreement with the Chinese Government for the formation of "the Chinese Eastern Railway Co., for the construction and working of a railway within the confines of China, from one of the points on the western borders of the Province of Heilungkiang to one of the points on the eastern borders of the Province of Kirin, and for the connection of this railway with those branches which the Imperial Russian Government will construct to the Chinese frontier from Trans-Baikalia and the Southern Ussuri lines."

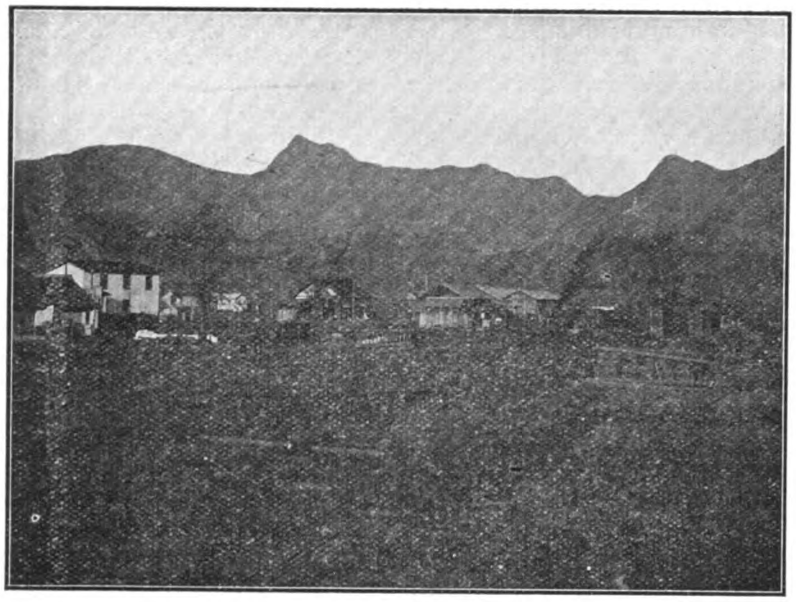
It is noticeable that the agreement contained no definite mention of the Manchurian railways specified in the Cassini Convention, but subsequent developments showed that they were kept in mind. Points of interest that the Agreement did contain, however, were that the Chinese Eastern Railway Company should have the right to exploit coal mines and other mining and industrial enterprises; that the shares of the Company should be owned only by Russian and Chinese subjects; that the Company should only retain possession of the Chinese Eastern Railway during the course of eighty years from the day of opening the traffic along the whole line, the railway then to revert to the Chinese Government without payment; that on the expiration of thirty-six years from the time of completion of the whole line and its opening for traffic the Chinese Government should have the right of acquiring the line on refunding to the Company in full all the outlays made on it, and on payment for everything done for the requirements of the railway; that the line should be completed not later than six years from the time when the direction of the line should be finally determined and the necessary land assigned to the Company; that the capital of the Company should be fixed at five million nominal credit roubles, divided into 1,000 shares at 5,000 nominal credit roubles, the remaining portion of the capital to be formed by the issue of bonds; that the gauge should be the Russian gauge of five feet.

Possessed of this agreement, the Russo-Asiatic Bank formed the Chinese Eastern Railway Company, and surveys were made, the first sod of the Manchurian Railway being cut at a point on the eastern frontier of the Province of Kirin and the Primorsk on August 28, 1897.

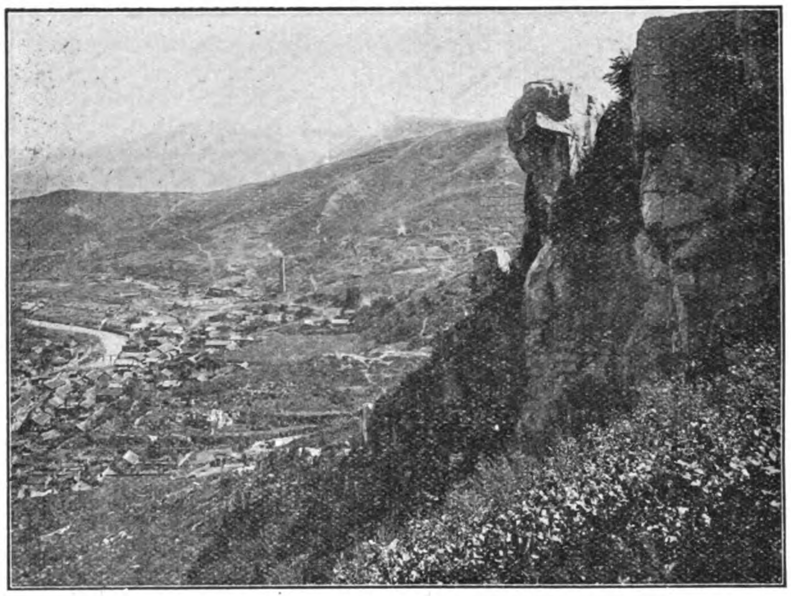
Meanwhile the Russian diplomats were engaged in arranging with China for the lease of Port Arthur and Dalny, and on March 27, 1898, an agreement was signed giving effect to this desire. This permitted a definite objective being obtained for the railway. In order to extend the Russian line to Port Arthur and Dalny an agreement was entered into at St. Petersburg on July 6, 1898, between the Chinese and Russian Governments giving the right for the construction of a branch line. Article 1 stipulated that the branch should be known as the South Manchurian Branch of the Chinese Eastern Railway. Other articles provided that the Company should be given facilities to transport materials by land or water for the railway; that they should be permitted to build temporary branch lines from the Southern Manchurian line to Yingkou and seaports in the neutral zone, but when the work of building the railway was completed and the whole line opened to traffic all these temporary branch lines should be removed at the pleasure of the Chinese Government. The agreement also provided that the Company should have the right to fell timber, mine coal, and establish a steamship line. It was also stipulated that Russia should have the right to fix Customs duties in the leased territory on the Liaotung Peninsula. By the spring of 1898 a site was selected near



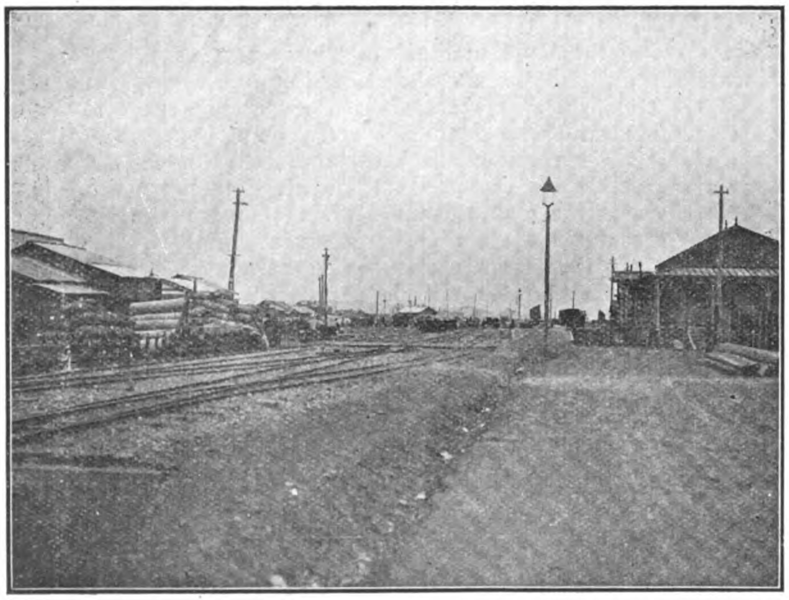
Penchihu Colliery on the Line of the Antung-Mukden Railway.



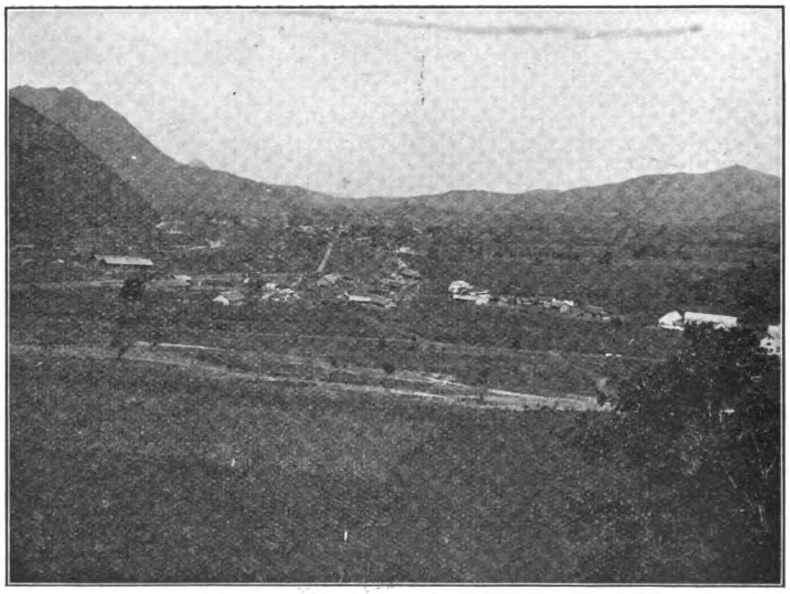
Penchihu Station.



Penchihu Town and Colliery.



Railway Station at Antung.



View of Tsaohoku; midway between Antung and Mukden.

Newchwang, on the Liao River, as the terminus of a branch line to be constructed to connect Port Arthur and Dalny with the Manchurian railway. This short line was completed in 1899 and work on the main line southwards to Port Arthur and northwards to Mukden was begun, and by 1900 the railway from Harbin to Port Arthur was practically completed with the exception of a number of bridges. During the Boxer rising much of the line was destroyed, but upon the suppression of the movement work was vigorously renewed and by the fall of 1901 the entire Chinese Eastern Railway connecting the Trans-Siberia with Vladivostock across Manchuria, and the line south from Harbin to Port Arthur was completed. This system in Manchuria in all measured some 1,600 miles, and is stated to have cost the Russian Government 300,000,000 roubles, or roughly $90,000 gold, per mile. And in addition to this Russia is stated to have expended another 250,000,000 roubles in building Port Arthur, Dalny, Harbin, fortifications and other enterprises outside the strictly railway work.

The Trend of Russian Diplomacy.

In the minds of those who conceived the great project, however, it was worth the money. It provided Russia with a railroad to an ice free port, and opened the way to supremacy in Manchuria and Peking and the ultimate absorption of Korea, a Russian dream of the period. Up to 1900 Russian diplomacy had worked, according to Mr. Putnam Weale in his "Reshaping of the Far East," to accustom China to three "grand points of view." The first was that Russia, "being without any convenient bases in the Far East free from ice all the year round, must be granted some port, or ports, which she could share with China. The second, leading as it were to the third, was that unless Russia were able to exert her great strength as a land Power her friendship with China could not take the form of material support in case a fresh crisis in the Far East should arise, and Japan attempt to repay China for calling in the help of the West. And the third and concluding point was this: In order to bring her myriads of soldiers to the Far East, Russia had already begun, years before the Japanese war, a grand trunk railway at great expense to herself; but as the railway would have to follow the northern bank of the Amur River it would be indefinitely delayed unless a more convenient route could be granted by generous and magnanimous China, who had already bestowed the Primorsk. . . . In the Cassini Convention we see all these points of view in their crude and undeveloped shape. . . . But the premature publication of the document changed the programme materially. Instead of a vague whole, a definite chain was now substituted link by link, as opportune moments presented themselves, and it was only due to disastrous 1900, which surprised every one from the Manchus to the Muscovites, that the proper methodical development of daring things was upset and hopelessly deranged. . . . . A whole volume might be filled tracing in great detail the curious process through which Russian diplomacy was forced to go from the moment of the Boxer rising to the outbreak of the great war (between Russia and Japan). . . . . Prince Tuan (whose party usurped the Government of China) declared a special war against Russia, in special edicts, ordering all Russians to be driven out of Mongolia and Manchuria. Russia again retorted by invading Manchuria and occupying the capitals, carrying fire and sword everywhere. . . . Finally Russians, in company with the troops of all nations, entered Peking. . . . During 1901 Russia had three distinct and separate roles to play in China: the part of ally to all Europe; the part of China's dear and secret friend in Peking; and the part of Manchuria's real master in the invaded provinces; whilst over and above in Europe she had to quiet the secret fears of numerous Chancelleries busily inquiring as to her real plans in the future. . . . . Parties in the Manchu Court began to raise their voices and earn merit safely by pointing out that it was incompatible with Chinese dignity to allow Manchuria, the cradle of the reigning dynasty, to remain in foreign hands. To the chorus of these voices the vernacular and English press in the Far East added its quota. . . . By the spring of 1902 matters had reached such a pitch that Russia had to cease acting so many different and ill-assorted roles and sign unconditionally the Manchurian Evacuation Agreement of the 8th of April, 1902. . . . . By 1903 Russia was assured that neither England nor America, in company with Japan, were prepared to go to the same lengths as Russia herself had done with France and Germany in 1895 over the Liaotung peninsula business, and therefore Russia was not unhappy. . . . The immediate consequences of the 1900 outbreak was to see Japan's position in regard to China vastly improved. . . . A party sprang into existence (in Peking) which openly favored a pro-Japanese policy in place of the former Russian *entente cordiale*, and the continuous presence of the Russians in Manchuria was responsible for the continuous quoting of that old Chinese proverb, whose origin is shrouded in the mists of antiquity, 'Do not fear the cock from the south but the wolf from the north.' . . . But it was with considerable surprise that both the Chinese Government and the Chinese press finally realized by the summer of 1903 that Japan had actually commenced direct negotiations with Russia and was determined to press for a definite understanding on all disputed points in the Far East."

Long before this, however, Japan had misgivings with regard to Russia's aggressive policy in Korea. Japan's situation in that country, too, had been jeopardised owing to the complicity of certain Japanese in the assassination of the Korean Queen, and it was not without difficulty that Japan had succeeded in arriving at a temporizing arrangement with Russia by means of the Yamagata-Lobanow Convention of 1896, the Komura-Weber Memorandum of 1896, and the Nishi-Rosen Protocol of 1898. This strained relation between Japan and Russia was aggravated by the latter's occupation of Manchuria after the Boxer trouble, and the negotiations above mentioned culminated in the war between Japan and Russia in 1904.

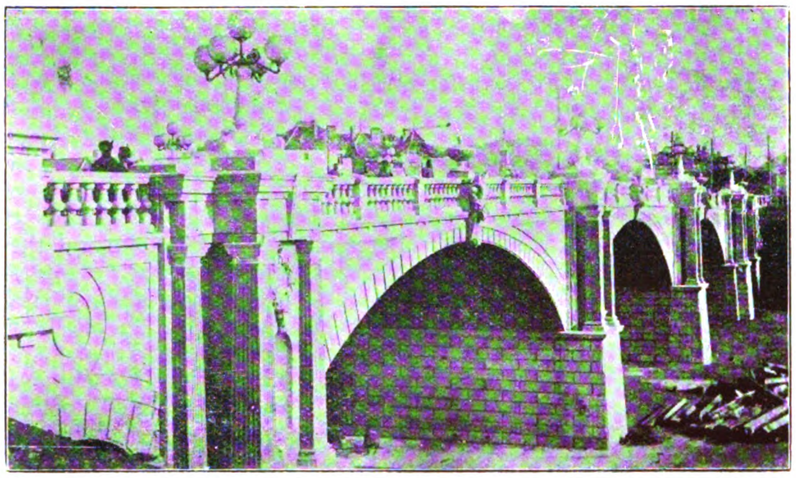
The Ejection of Russia.

Russia, to the surprise of the world, was defeated by Japan, and by virtue of the Treaty of Peace signed at Portsmouth, United States, on September 5, 1905, Japan came back into what she regarded as her own. The Treaty *inter alia* set down that Russia agreed that all rights possessed by her under the lease of Port Arthur and Dalny were to revert to Japan; Manchuria was to be evacuated simultaneously by both parties, and China was to be unhampered there in her methods of developing the natural resources of the country. Along the line of the railway through Manchuria separate zones were to be marked out and each of the contracting nations was to be supreme within its own sphere. The section of the Manchurian railway thus acquired by Japan was that extending from Changchun to Port Arthur and Dalny.

Article 6 of the Portsmouth Treaty, which dealt with the railway transfer, is as follows:—

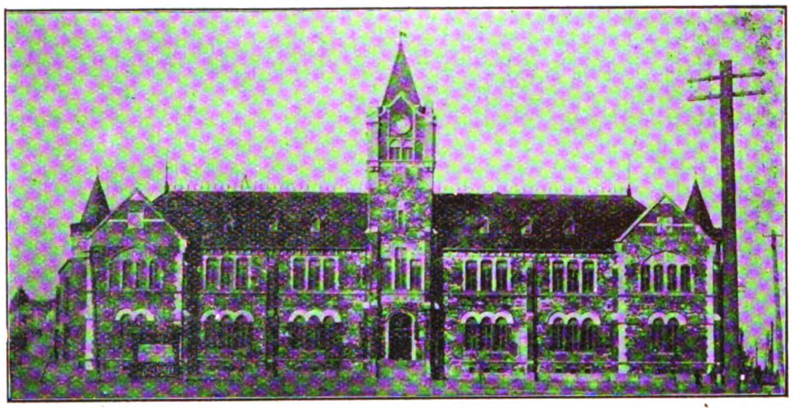
> The Imperial Russian Government engage to transfer and assign to the Imperial Government of Japan, without compensation and with the consent of the Chinese Government, the railway between Changchun (Kuan-cheng-tzu) and Port Arthur and all its branches, together with all rights, privileges, and properties appertaining thereto in that region, as well as all coal mines in the said region belonging to or worked for the benefit of the railway.
>
> The two High Contracting Parties mutually engage to obtain the consent of the Government of China mentioned in the foregoing stipulation.
>
> Japan and Russia engage to exploit their respective railways in Manchuria exclusively for commercial and industrial purposes and in no wise for strategic purposes.
>
> It is understood that restriction does not apply to the railway in the territory affected by the lease of the Liaotung Peninsula.
>
> The Imperial Governments of Japan and Russia, with a view to promote and facilitate intercourse and traffic, will as soon as possible conclude a separate convention for the regulation of their connecting railway services in Manchuria.

As a corollary to the Portsmouth Treaty a Treaty was signed in Peking on December 22, 1905, by China and Japan, definitely arranging points touched upon in the Portsmouth Treaty. To the Treaty it is said that a secret Protocol was attached containing sixteen articles dealing with the South Manchuria Railway, one of the articles being that the Chinese Government should not, with the object of protecting the interests of the South Manchuria Railway, construct prior to the recovery by them of the said railway, any main line in the neighbourhood of and parallel to that railway, or any branch line which might be prejudicial to the interest of that Railway. This clause is interesting inasmuch as

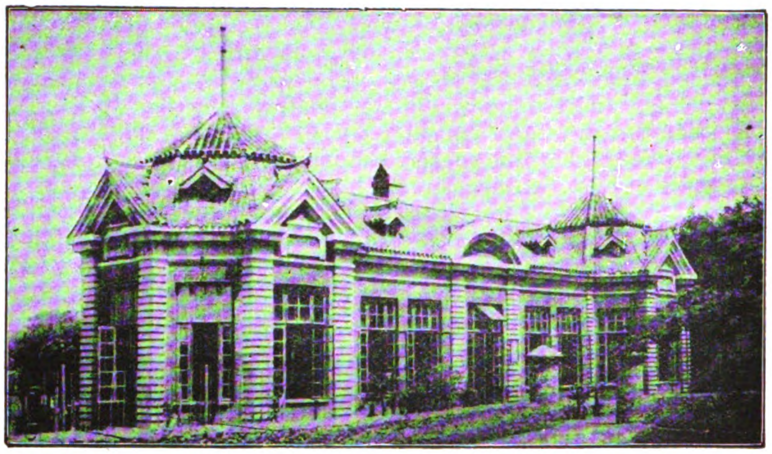


Nippon Bridge at Dairen.

View Across Nippon Bridge.

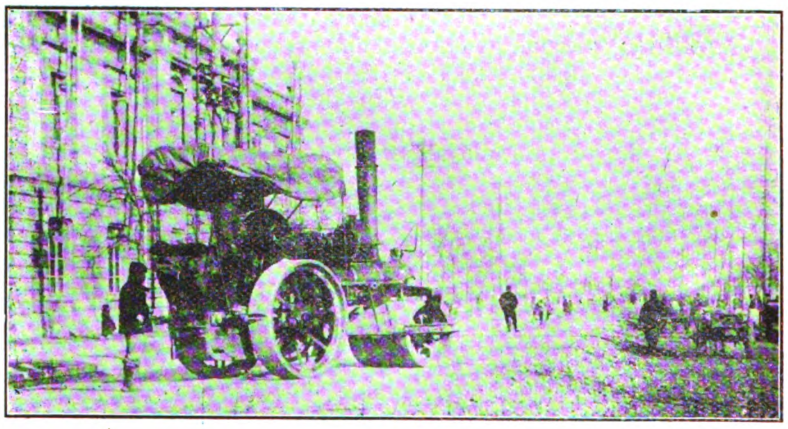


Civil Administration Building.

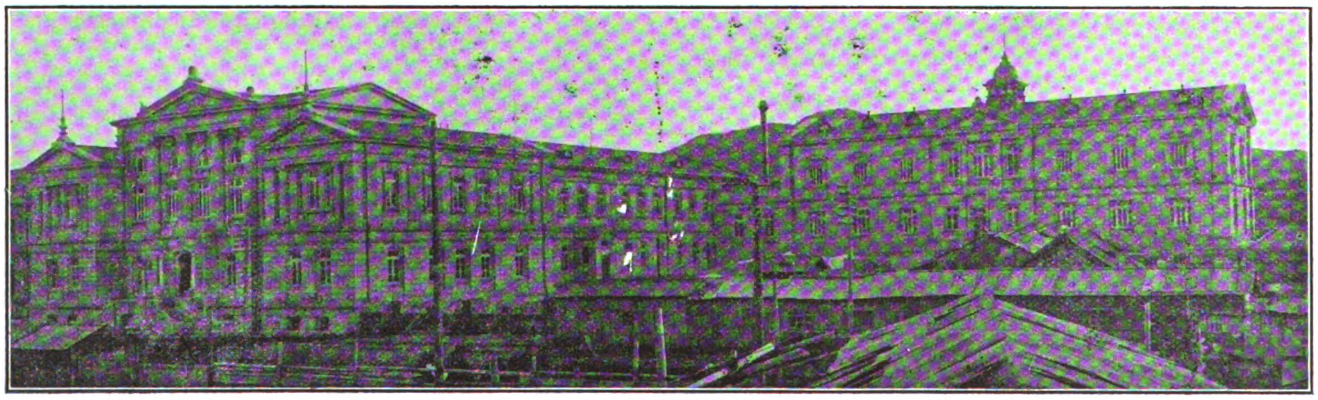


Laboratory Building, Dairen.

Kambu Street, Dairen.



Road Making, Dairen.



General Offices of South Manchuria Railway, Dairen.

it was used as the excuse for the strenuous efforts ultimately made to prevent the building of other railways by American and British interests. Another point in the Treaty which also ultimately developed into a warm wrangle, this time between China and Japan, was that giving Japan the right to maintain and work the military railway constructed between Antung and Mukden, which will be referred to later.

Japan was working for a thorough clearing up and adjustment of the railway questions in the territory over which she felt she was destined to dominate, and on April 15, 1907, she concluded another agreement with China for the purchase by China of the railway constructed by Japan between Hsinmintun and Mukden for Yen 1,600,000, and for the construction of a railway between Kirin and Changchun, which will be referred to later under that caption. Another agreement was signed in 1908 in which China agreed to extend the Kirin-Changchun railway to Yenchi and to connect it at Hoiryong with a Korean railway, and on the same date a further agreement was made settling other railway points, one being that the Chinese Government would not construct a railway from Hsinmintun to Fakumen without consulting Japan. On November 12, 1908, still another agreement was made with regard to the Kirin-Changchun railway, this time making provision for a loan for the work.

Mention of the Hsinmintun-Fakumen railway above brings us to a question which caused grave difficulties and involved the Japanese in hot newspaper controversy with British and American interests. It also afforded demonstration that undertakings in Treaties are not necessarily made with the object of ultimate fulfilment. For instance the Treaty of Portsmouth bound the signatory Powers "not to obstruct any general measures, common to all countries, which China may take for the development of commerce and industry in Manchuria," yet Japan subsequently secured from China, as mentioned above, the agreement not to build any railway which might be detrimental to the South Manchuria Railway. This agreement with Japan jeopardised the rights of China which were fully protected by the Portsmouth Treaty, and Japan took full advantage of it when an agreement was entered into between the Governor of Mukden (Mr. Tang Shao yi) and Lord French, representing Messrs. Pauling and Company, of London, and Mr. J. O. P. Bland, representing the British and Chinese Corporation, for the construction and financing of the Fakumen extension of the Imperial Railway of North China. Despite the torrent of abuse that flowed upon Japan from certain sections of the British and American press Japan was, however, able to have the agreement suspended, and thereby removed what would ultimately have proved a nasty thorn from her side.

America's Advent in Manchuria.

But to give a fuller understanding of the entrance of other interests into the preserves of Japan in Manchuria it may perhaps be as well to give a summary of the events as written by Mr. J. O. P. Bland in his excellent work, "Recent Events and Present Policies in China." Mr. Bland, at the time of the happenings, represented the British and Chinese Corporation in Peking, and therefore should be well-equipped to speak. A statement of his account of the events is as follows:

Immediately after the signature of the Portsmouth Treaty the American Railway magnate, Mr. E. H. Harriman, concluded with Marquis Ito and Marquis Katsura, a Memorandum of Agreement for joint American-Japanese ownership and working of the South Manchuria Railway, together with the various coal, timber and mining concessions which the Russians had extracted from Chinese officials. This joint working scheme, to be financed with American capital, was to form a link in Mr. Harriman's projected round-the-world transportation system, but it came to nothing owing to the conclusion of the Peking agreement of December 22, 1905, which put an end to the open-door shibboleths of the Portsmouth Treaty. Upon the conclusion of that agreement Count Komura telegraphed to Tokyo and Mr. Harriman was duly informed that the Chinese Government would not consent to the admission of American capital to the South Manchuria Railway system, desiring themselves, in due course, to join the Japanese in working it! In the light of subsequent events, however, we are justified in concluding that Count Komura, fully appreciating the actual strength of his country's position and the probable tendency of world's politics in the future, thought it advisable to keep Manchuria free from American "entanglements" and the prospects of joint control. As events proved, Japan had no difficulty in raising in England the capital required for the restoration of the South Manchuria Railway; and with characteristic *savoir faire*, she spent a considerable part of this loan in purchasing railway equipment in the United States. No more was heard, for the time being, of Mr. Harriman's scheme, but the idea was germinating, nevertheless, at the State Department, and was to bear its fruit in due season.

In the summer of 1906 Russian officials connected with the Chinese Eastern Railway approached American capitalists with a proposal to sell that line, and negotiations of a desultory kind proceeded at intervals until the autumn of 1909, when Mr. Secretary Knox's "neutralisation scheme" completely changed the situation and precipitated the Russo-Japanese entente.

In the meanwhile, the Chinese Government, represented by Mr. Tang Shao-yi, realising the significance of Japan's disinterested friendship, was endeavoring by all possible means to enlist the active sympathy and support of the United States and Great Britain in Manchuria, by offering opportunities for railway construction to American and English capitalists and contractors.

The Chinchow-Aigun Railway Scheme.

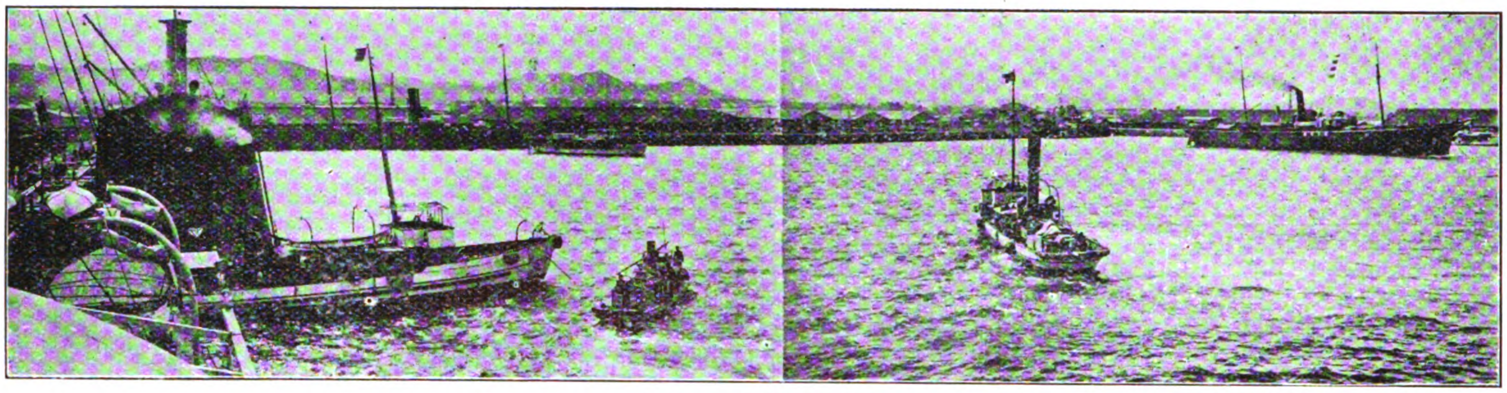
In August, 1907, he arranged with Mr. Willard Straight, then United States Consul-General at Mukden, a project for the creation of a Manchurian Bank, financed by American capital, to be the financial agent of the Manchurian Government, and to undertake the construction (in co-operation with Messrs. Pauling and Co., the British railway contractors) of a line from Hsinmintun to Aigun, and other important enterprises. Owing to the financial panic prevailing in the United States the project was delayed, but in the summer of 1908 Mr. Straight took with him to Washington a Memorandum signed by the Governor of Mukden, which was to form the basis of negotiations for a loan of £20,000,000 for the establishment of the Manchurian Bank. In the meanwhile, subject to financial arrangements, the Manchurian Government had concluded an agreement with Lord French, representing Messrs. Pauling and Co., for the construction of a railway running southwards from Tsitsihar to connect with the Imperial Railways of North China. The Manchurian Bank was to undertake, with American capital, the extension of this line from Tsitsihar to Aigun. For the satisfactory completion of projects of such magnitude it was necessary that a competent and responsible representative of China should discuss the details in person in Washington and New York. Tang Shao-yi was therefore appointed on a special mission to America and left Peking on September 24, and arrived in Washington on November 30. At the beginning of November Mr. Harriman's bankers, Messrs. Kuhn, Loeb and Co., had signified to the State Department their readiness to undertake to finance the Manchurian Bank, if satisfactory terms could be arranged.

On the day that Tang Shao-yi arrived in Washington the American Government exchanged Notes with the Japanese Ambassador at Washington recording the desire of both Governments "to encourage the free and peaceful development of their commerce on the Pacific Ocean," their firm determination "to support, by all pacific means at their disposal, the independence and integrity of China and the principle of equal opportunity," and their intention to "maintain the status quo in the region above mentioned." The death of the Emperor of China, Kuang Hsu, on November 14, followed the next day by the death of the Empress Dowager, doomed the mission of Tang Shao-yi and he was recalled to China on January 8. In December he was consulted by American capitalists regarding the proposals in connection with the Chinese Eastern Railway, which the Russian Government was willing to sell if Japan would agree to sell the South Manchuria Railway, Tang Shao-yi said that China would welcome the scheme. He hoped that an international syndicate might be organised to purchase both railways on behalf of the Chinese Government, thus anticipating the provision for their repurchase contained in the Russo-Chinese Railway agreement of 1896. This was the germ of Mr. Knox's "neutralisation scheme." Before the idea could develop, Mr. Harriman died and the plans died with him.

Mr. Knox's Neutralisation Scheme.

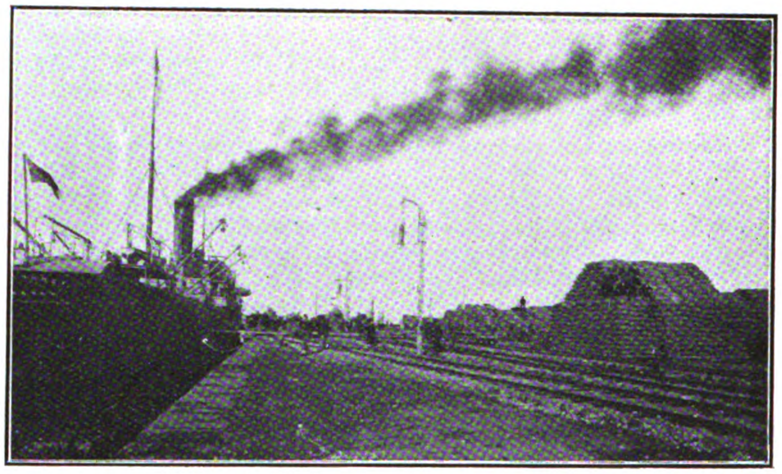
On October 2 the Chinese Government, strongly urged by American financiers, signed a preliminary agreement for the construction of the Chinchou-Aigun railway, and things were at this stage when Mr. Secretary Knox in November broached to the British Government his scheme for the neutralisation of the Manchurian railways. The moment chosen and the manner of its presentment, were equally unfortunate. The British Government expressed its guarded acquiescence in the principles advocated provided that the Powers concerned were favorably disposed. Mr. Knox, however, assumed that the British attitude was equivalent to moral support and proceeded to submit his scheme simultaneously to the British, French, German, Russian, Japanese and Chinese Governments. Diplomatically speaking, his procedure in this matter was a serious blunder, in that he failed, in the first instance, to consult the Powers chiefly concerned, Russia and Japan.

The purport of Mr. Knox's scheme amounted to a proposal that the Powers addressed should authorise the organisation of an international syndicate to buy out the Russian and Japanese railway interests in Manchuria, and it was suggested that if the Powers were unwilling to join in the general neutralisation scheme they should at least unite in the financing and construction of the Chinchou-Aigun railway. The presentation of this second proposition overlooked the vital fact, Mr. Bland points out, that by the Portsmouth Treaty China was strictly entitled to use her own discretion in the development of her commerce

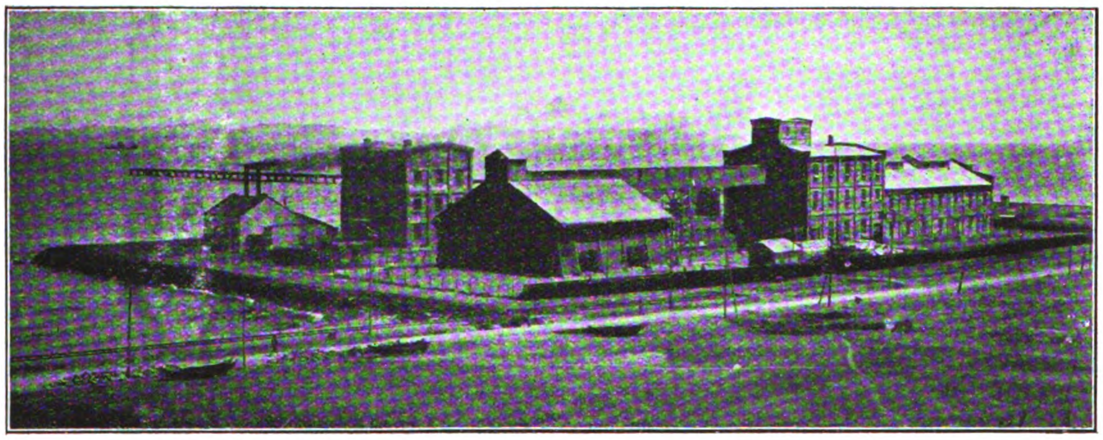


Panoramic View of Wharves at Dairen.

Sacked Beans Awaiting Shipment at Dairen.

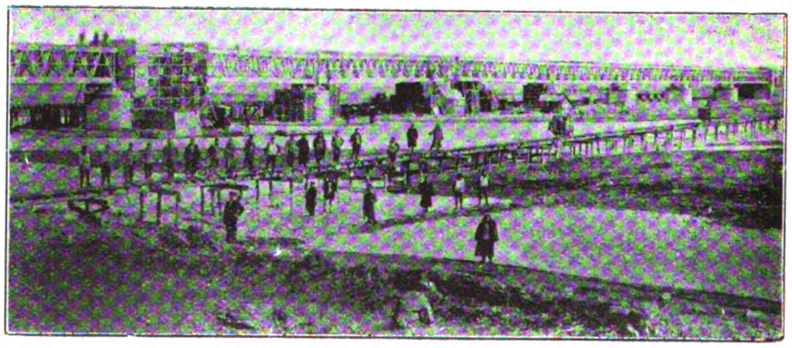


Railway Employees' Quarters at Dairen.



South Manchurian Railway's Experimental Bean Mill.

Stacks of Kiaoliang.



Bridge near Dairen.

and industry in Manchuria. It was imperative in China's interests that the two questions should be treated separately. Mr. Rockhill, then American Ambassador at St. Petersburg, realised this fundamental fact and presented to the Russian Government only the neutralisation scheme. The Russian Government, learning of the second proposition through its Ambassadors, naturally jumped to the conclusion that the American Government was playing a double game—of which Mr. Knox was constitutionally incapable. Their suspicions thus aroused, the neutralisation scheme was doomed and the Russo-Japanese entente to divide Manchuria and Mongolia began from this moment to assume definite form and substance. The American Government's policy was, Mr. Bland emphasizes, irreproachable and just; but it erred in assuming, as usual, a restraining virtue in Treaties and Conventions. Everything depended upon separating Russia from Japan; everything was done to irritate Russian sensitiveness and to lay the foundations of the predatory pact which has since dominated the Far Eastern situation. The immediate result of the scheme was the Russo-Japanese agreement of July 4, 1910.

The Withdrawal of America.

There remained nothing for the Americans to do but to proceed independently in the matter of the Chinchou-Aigun railway, the final detailed agreement for which was completed in April, 1910, and protested against by Japan and Russia. It was denounced as a deep laid plan for attacking Russian territories in Eastern Siberia and Russia's special interests in Mongolia and Manchuria. The pledge given in the Portsmouth Treaty by Russia and Japan alike, not to exploit their existing railways for strategic purposes was deliberately repudiated and an intimation was plainly conveyed to the Waiwupu that the joint protests against the Chinchou-Aigun scheme were based on considerations of political and strategical expediency. The Viceroy of Manchuria endeavored repeatedly to obtain assurances that the American Government would afford material assistance, if necessary, in the matter of the railway, given which the Chinese Government was prepared to proceed with its construction. But the United States were evidently not in a position to support China, single handed, to the logical conclusions of such an engagement. Mr. Knox's scheme had come up against the stone wall of hard facts. Benevolent theories, in Peking as in Panama, are powerless against the forces of geographical gravitation.

Mr. Bland exhaustively deals with other Manchurian Development schemes and the effect of the Russo-Japanese entente, which readers who are interested would do well to peruse. Exigencies of space compel us to leave the matter with one or two of the author's conclusions.

Mr. Bland sums up that the appearance of the United States as a world Power on the crowded stage of the Far East has been characterised by vigorous initiative and sound political instincts, hampered by lack of *savoir-faire* and an almost crude naivety of diplomatic procedure at the State Department. To America, nevertheless, must be given credit for appreciating the essential facts of the situation and the courage to face them. Taking a broad view of the future of world politics in the Far East, it would seem that America may yet have cause to recognise that the movement of Japanese expansion in Manchuria and Mongolia is preferable to its activities in Chili, Peru, and Brazil. From the American point of view the potential trade of China is undoubtedly worth defending by every possible device of diplomacy; but the crux of the situation lies in the fact that Russia and Japan are both well aware that it is not worth the sacrifices of a war. If China's "rights recovery" programme is, as we believe, a vain dream, then treaties and conventions notwithstanding, Japan will extend her Empire westwards on the Asiatic continent at China's expense. As it was with Korea so it must be with any desirable territories to the north and west of the Great Wall, which China cannot defend by force of arms.

And finally Mr. Bland ventures on a prophecy which China at this moment is curiously watching to see if it will be fulfilled.

The facts just quoted once recognised, he writes, and the advantages admitted of diverting Japanese expansion westwards, all the assurances and shibboleths now current in regard to the maintenance of China's integrity will be decently and quietly folded away, as they were in Korea—exchanged for practical bargainings as to the maintenance of existing tariffs, and a door left temporarily open to international trade. For, with America as with Japan and every other Power of the modern world, the gospel of necessity is greater, in the end, than any international obligations

New Japanese and Russian Projects.

The departure of America from the Manchuria field was evidently regarded as complete by Japan despite the fact that those concerned had notified China that they adhered to their right in the agreement for the construction of the Chinchou-Aigun railway. The adherence was, it would appear, merely academic, for in 1913 Japan began to test just what American feeling would amount to in regard to that projected line. The test was the opening of negotiations with China for the construction of railways in Eastern Inner Mongolia. Newspapers both in China and Japan published information of Japan's desires, but nothing in the shape of a protest emanated from America when it became known that the railways which Japan purposed constructing practically followed the route, or a great part of it, which would have been covered by the Chinchou-Aigun railway.

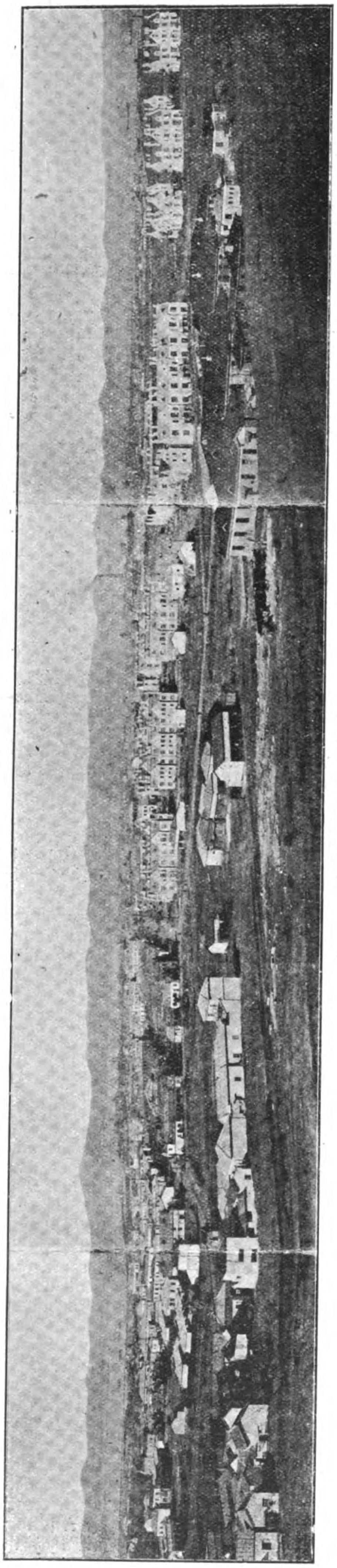
Japan, in short, negotiated for, and came to an understanding about, a railway virtually from Jehol to Taonanfu, and from that city to the South Manchuria Railway either at Shihpingkai or Changchun. At the same time, too, for a line to connect Kaiyuan with Hailungcheng. A railway from Taonanfu to Jehol would, of course, cover the southern section of any line from Chinchou to Tsitsihar and Aigun, but this notwithstanding, neither the British, who were interested owing to Messrs. Pauling and Co's connection with it, nor the Americans, raised a murmur of dissent, an attitude which could indicate nothing but that they were ready to recognise the inevitable fact that Japan could not be restrained. Messrs. Pauling and Co., were, however, now interested in another railway south of the Yangtsze, that from Shasi to Shingyifu, and were content to relinquish any claims to the Chinchou-Aigun agreement.

America's quiescent attitude was, however, significant, and was unexpected by Japan and Russia. Both felt that a revival of the old Chinchow-Aigun controversy was certain, and when it did not develop they regarded it as obvious that the State Department had lost interest in the Manchurian question entirely. And Russia did not realise the fact with regret. Her representatives promptly renewed negotiations with the Chinese Government for an extension of the Russian railway system in North Manchuria, and ultimately came to an understanding with the Government for the right to construct a railway from Blagoveshchensk on the north bank of the Amur River to Aigun on the south bank, thence to Mergen (about half way to Tsitsihar), thence to Harbin. What is talked of as "a branch line" will also connect Mergen with Tsitsihar and the Siberian railway. This scheme will cover the northern section of the proposed Chinchou-Aigun railway, and the only gap unprovided for by the schemes of Japan and Russia is that small section between Taonanfu and Tsitsihar, a matter of easy and natural adjustment when the time arrives.

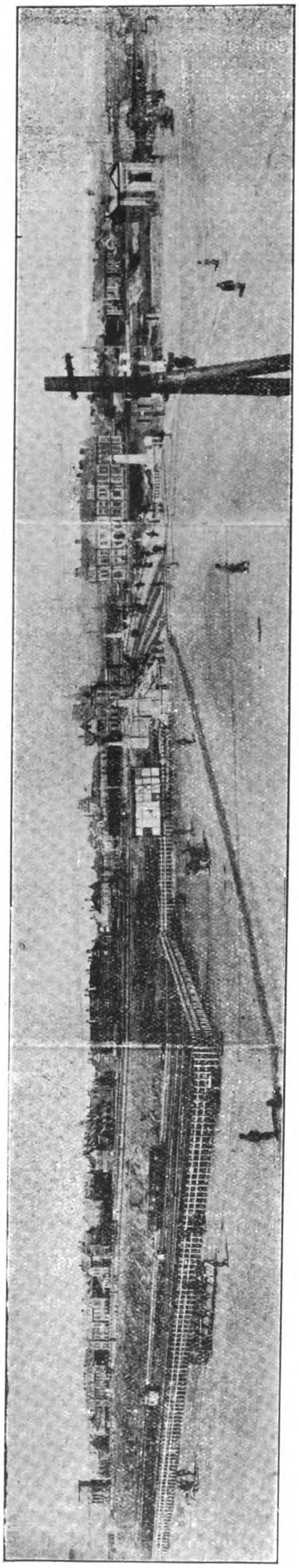
These projects completely put the Chinchou-Aigun proposal out of court, and as America has objected to neither it must be taken for granted that she is content to permit her claims to go by default. The Russian scheme will give Russia complete railway dominance in the north of Manchuria, an understanding arranged with Japan prior to the European war, and the Japanese gains in Manchuria as a result of the negotiations now proceeding, combined with the projects in Eastern Inner Mongolia, render her position secure there, at least for the time being. Putting politics aside the result will be an adequate development of a vast and rich region, the only regrettable feature being that China has been unable to take advantage of the well-meant efforts that have from time to time been made to help her retain dominance for her own national advantage.

The South Manchuria Railway Co.

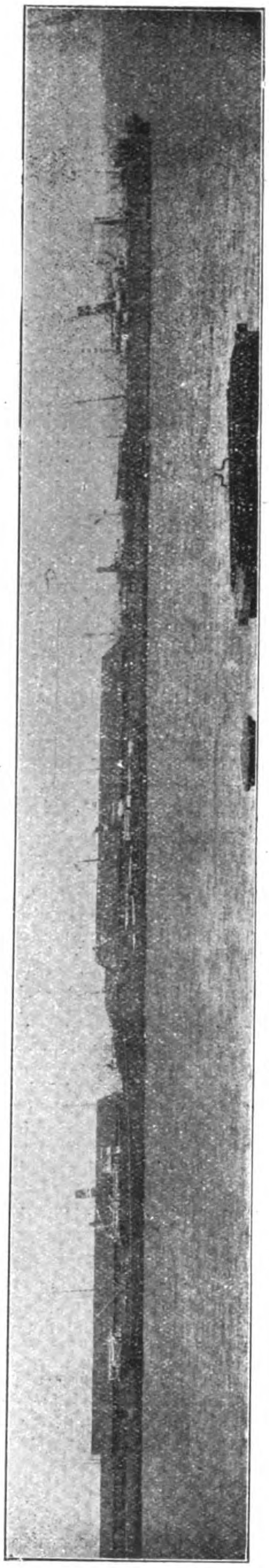
The terms of the Peking Protocol, previously mentioned, which refer to the South Manchuria Railway have been kept secret, but acting upon them the Japanese Government took steps to form the South Manchuria Railway Company to operate the railway, mines and other industries. On June 7, 1906, therefore, an Imperial Ordinance was issued concerning the establishment of the Company, and on July 13 of the same year General Viscount G. Kodama was appointed President of the Organization Committee which was composed of 81 members. Viscount Kodama died before he was able to take up the work and Viscount Terauchi, Minister of War, assumed the presidency on July 25. On August 1 the Government forwarded the Committee the conditions pertaining to the establishment of the Company and on August 18 the Government approved the Articles of Association. The subscription for shares took place from September 10 to October 15, and the establishment of the Company was finally sanctioned by the Minister of Communications on November 1. The Board of Directors is composed of one President, one Vice-President, and at least four Directors, in addition to whom the Company has from 3 to 5 Auditors. Both the President and the Vice-President are appointed by the



Panoramic view of Dairen.



New Foreign Quarter of Dairen.



South Manchuria Railway Terminus, Dairen.

Government with Imperial Sanction; the Directors are also appointed by the Government from among shareholders owning at least 50 shares, while the Auditors are elected at the general meeting of shareholders. Baron S. Goto was appointed the first President of the Company. The head office and headquarters of the Company were established at Dalny, and a branch office was opened in Tokyo.

The authorised capital of the Company is two hundred million yen, which is divided into one million shares of 200 yen (about £20) each. The Japanese Government owns half of the total authorized capital, viz., one hundred million yen, which is its share for handing over to the Company the complete railway lines in Manchuria with the properties attaching thereto (except the rolling stock and the rails and accessory materials on the Antung-Mukden railway) and the coal mines of Fushun and Yentai—altogether of an assessed total value of one hundred million yen. The other half, namely, one hundred million yen, may be subscribed for and taken up by the Chinese Government and Japanese and Chinese subjects only; and the shareholders are guaranteed a dividend of 6 per cent. per annum by the Japanese Government. Owing to the economic conditions in Japan at the time of the establishment of the Company the first issue of shares was limited to the amount of twenty million yen, of which only one-tenth was called up. But, as the enterprises of the Company advanced, necessity arose to raise funds by other means than debentures, and the Company made another call in 1912 of sixty yen per share, amounting to six million yen. The shares not yet issued amount to eighty million yen, while the share capital subscribed but not yet paid up is twelve million yen.

On April 1, 1907, the Company began its business, having on the same day taken possession of the following properties, which constitute the investment of the Company:—

1.—The railway lines between Dairen (Dalny) and Changchun; Tafangshen and Liushutun (now in operation); Nankuanling and Port Arthur; Tashihchiao and Yingkou; Yentai on the main line and the Yentai coal mine; Suchiatun and Fushun coal mine; and Antung and Mukden.

2.—The machinery, implements, and other materials actually in use on the above railways and mines, and also on the railway line between Mukden and Hsinmintun.

3.—The properties in land, buildings, and other establishments both within and without the Kwantung Leased Territory, belonging to the above railways and mines.

The Mukden-Hsinmintun Railway, and all appurtenances, was ceded to the Chinese Government by an agreement entered into on April 15, 1907, its actual transfer taking place on June 1, of the same year; and in fulfilment of an agreement entered into in June, 1907, with the Russian Government at St. Petersburg, the railway lines and properties to the south of Kwanchengtzu station, together with the coal mines of Shihpeiling and Taochiatun and their appurtenances, were formally transferred to the South Manchuria Railway Company between July 15 and July 18, 1907.

With the object of raising, largely through debentures, the funds required for the construction of these railways, as well as for the subsidiary undertakings, the Company at various times floated in London by three separate issues of debentures a total amount of £8,000,000 sterling at the uniform rate of interest of 5 per cent., both capital and interest being guaranteed by the Japanese Government. The following debentures were thus issued:—

1st issue: £4,000,000 sterling issued on July 19, 1907, redeemable within 25 years.

2nd issue: £2,000,000 sterling, issued on June 1, 1908, redeemable within 3 years.

3rd issue: £2,000,000 sterling, issued on December 16, 1908, redeemable on July 23, 1932.

Partly to meet the increasing demand for expenditure consequent upon the progress of the Company's enterprises, and partly to repay the notes for £2,000,000 falling due on June 1, 1911, it became necessary to float debentures a fourth time in London. Therefore subscription for £6,000,000 sterling 4½ per cent. bonds (subscription price 98 per cent., repayable on January 1, 1936, the repayment of principal and interest being unconditionally guaranteed by the Imperial Japanese Government as before) was opened on January 3, 1911, and closed on January 5.

The present debentures of the Company are:—
£6,000,000 5 per cent. sterling bonds.
£6,000,000 4½ per cent. sterling bonds.
Total £12,000,000 = Gold Yen 117,156,000.

The railways acquired from the Government of April 1, 1907, were as follow:—

The main line between Dairen and Changchun	437½	miles.
The Port Arthur branch line	28.8	„
The Liushutun branch line	3.6	„
The Yingkou branch line	13.4	„
The Yentai branch line	9.7	„
The Fushun branch line	38.9	„
The Mukden-Antung line (189 miles by light railway) now, by standard gauge	170.7	„

The gauge of the whole of the above railways when acquired by the Company from the Government was 3ft. 6in., with the exception of that of the Antung-Mukden line, which was only 2ft. 6in. This, however, does not include the line from Mukden to Hsinmintun, which, though originally included in the system acquired by the Company, was ceded to China, as already mentioned.

Immediately after the acquisition of these railways the Company commenced, and, without the slightest interruption of traffic, executed their reconstruction to the standard gauge of 4ft. 8½in.—except the Antung-Mukden line—and also the doubling of the track between Dairen and Suchiatun, a distance of 238½ miles. So expeditiously was this performed that as early as November, 1907, traffic on the standard gauge was opened on the Port Arthur line, and on June 1, 1908, the entire main line, as well as the Fushun and Yingkou branch lines, had been rebuilt and completed. In spite of adverse circumstance of every kind consequent upon the war with Russia the engineers of the Company succeeded in widening the gauge on more than 500 miles of railway line, at the same time erecting more than 200 locomotives and 2,500 cars newly received from abroad, thus making it possible for the Company to effect the change to standard gauge practically without interruption of traffic for a single day and without the slightest obstruction.

The Yinkou branch line, which formerly had its terminus at Niuchiatun, was also extended as far as the centre of the Japanese town of Yingkou, where a new station was built and opened for passenger traffic in November, 1909, the old station being utilised as a goods office.

The reconstruction of the Yentai branch line, which became necessary in consequence of the increased output of the Yentai coal mine, was also completed on January 7, 1910, and on March 11, 1910, goods trains commenced to run between Liaoyang and the Yentai coal mine.

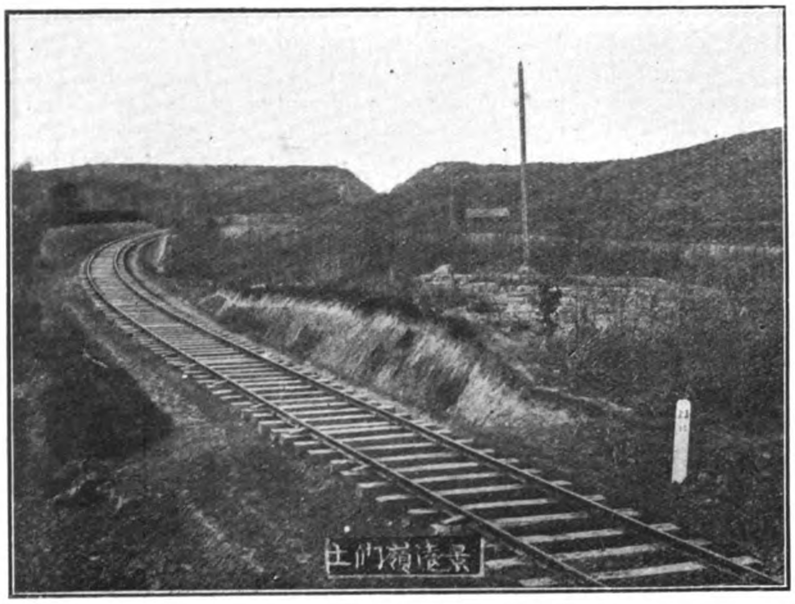
Originally a central railway workshop was erected in Dairen for the construction of rolling stock, repairs, and other works, not only to meet the requirements of the Company but those from outside. Besides the central workshop, small workshops for the repair of rolling stock, machinery, and implements were established in Liaoyang, Kungchuling, and Antung. However, as these workshops soon proved to be altogether too small and insufficiently equipped to cope with the ever-increasing demands it was decided to erect new and in every respect modernly equipped workshops on an extensive scale at Shaokou, near Dairen; and this scheme was commenced towards the end of 1908 and completed on August 9, 1911, together with house accommodation for 1,800 workmen and their families.

In addition to the railways, which undoubtedly are the best equipped in this part of the world, the Company conducts other enterprises including shipping, harbour affairs, coal mines, electrical works, gas works, hotels, and experimental laboratories. All are controlled with the degree of thoroughness which now is familiarly associated with Japanese concerns, and in every respect Japan can be honestly congratulated upon the remarkable efficiency that has been attained in the enterprises which she has taken over or developed in Manchuria.

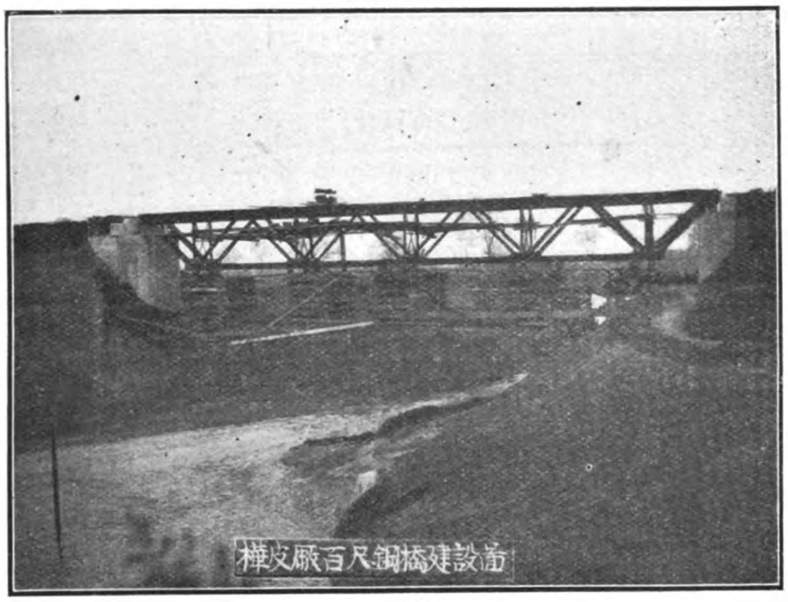
From time to time the Far Eastern Review has published illustrated descriptions of the various enterprises of the Company,

View of Kirin, Showing Sungari River.

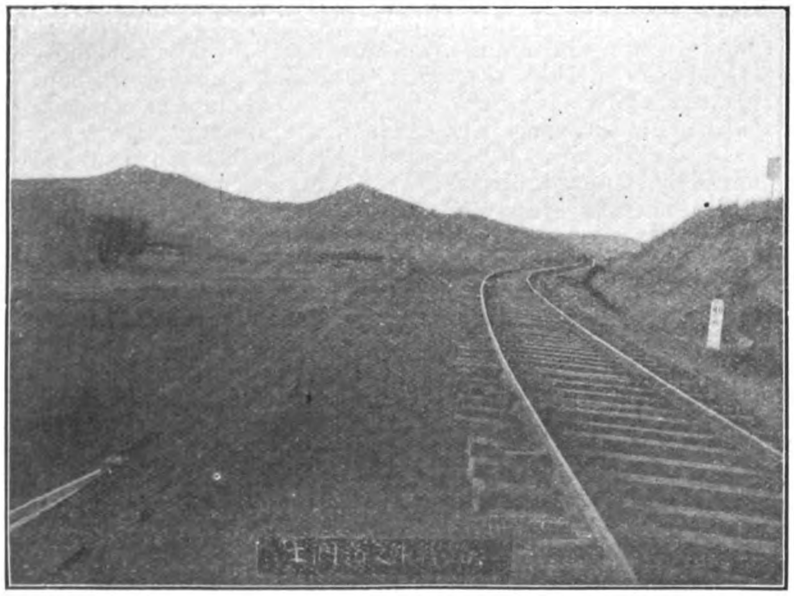
Seveuty Foot Cut at Santoliu.



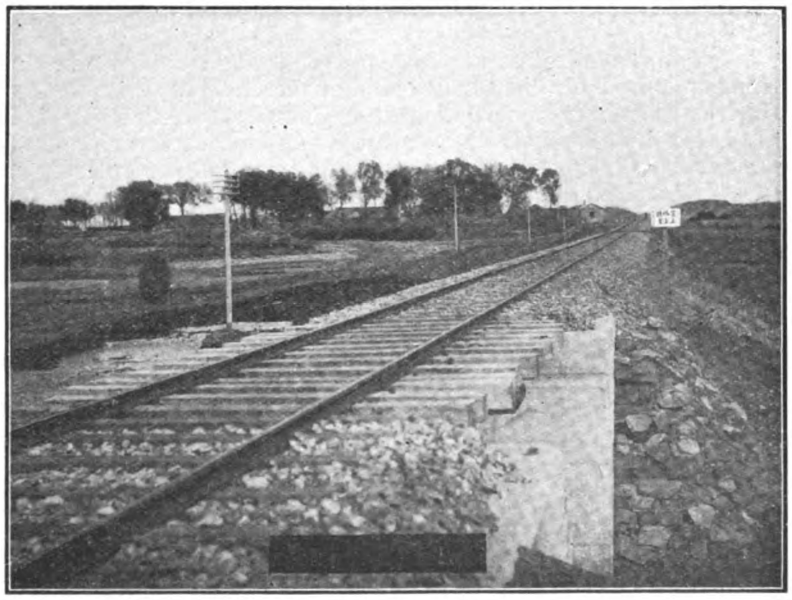
Tumenling Pass on Kirin-Changchun Railway.



Bridge at Huapichuan on Kirin-Changchun Railway.



Eastern Side of Tumenling Pass.



Long Tangent on Kirin-Changchun Railway near Kalun.

and it is only intended here briefly to record the progress achieved since the taking over of the enterprises from the Russians.

A Convention relating to the Japanese and Russian Railway connection in Manchuria was signed at St. Petersburg on June 13, 1907, to conform with the provisions of Article VIII of the Portsmouth Treaty. The Convention arranged for the junction at the Kuanchengtze station and for the establishment of direct communication for passengers and for merchandise, and also all the necessary installations in order to effect in the shortest time and with the least expense possible, the transport of the merchandise at the terminal stations, made necessary by the difference in the width of the gauges.

A Protocol to the Convention was made to settle "certain questions relative to the terminus of Kuanchengtse and to the coal mines of Shibelin and Taokiatun." Article 1 states:

> It has been agreed between the two high contracting parties that in principle the terminus of Kuanchengtse and its appendages are the common property of Japan and Russia, but that for the sake of practical convenience, the exclusive ownership of the said terminus and of its appendages shall remain with Russia, and that for it the Russian Government shall pay to the Japanese Government a sum of 560,393 roubles in virtue of compensation for the renunciation by Japan of her rights of co-ownership of the Kuanchengtse terminus and its appendages.

Article 2 dealt, inter alia, with the transfer of the coal mines at Shibelin and Taokiatun with all their appendages.

A further convention was signed at St. Petersburg on July 4, 1910, to develop the effects of the former one. The high contracting parties mutually agreed to lend to each other their friendly co-operation "with a view to the amelioration of their respective railway lines in Manchuria and the improvement of the connecting service of the said railways and to abstain from all competition prejudicial to the realization of this object." In Article II of the Convention they engage "to maintain and respect the status quo in Manchuria resulting from the treaties, conventions and other arrangements concluded up to this day between Japan and Russia or between either of those two Powers and China."

In addition to this convention special traffic agreements have been made between the two Companies and as a result efficient passenger services have been conducted to and from the Far East and Europe, the only inconvenience being the necessity for passengers to change trains, owing to the difference in gauge, at Kuanchengtse. The service has materially reduced the time of a journey either to or from Europe, and passengers always speak in the highest terms of the facilities provided for the long railway journey.

The South Manchuria Railway in particular caters in the best manner possible for passengers, and has earned the reputation of conducting a service second to none in the world. Whatever the politics that may be involved in this railway matter the fact remains that the world has gained by it, and the extension of the lease to 99 years as agreed to by the Chinese at the conferences now sitting added but nineteen years to the term that was to run.

The Antung-Mukden Railway.

By acquiring an extension of the agreement of the Antung-Mukden Railway, which expires in 1923, to 99 years, Japan is able to bring this hitherto much disputed concern into line with the South Manchuria Railway so far as the term of possession is concerned. It was hurriedly constructed by Japan purely as a military railway during the war with Russia, and covered a distance of some 189 miles, the gauge being a narrow one of 2½ feet. After the war China pressed for the removal of the line, but Japan had other ideas and countered the Chinese proposals by demanding the right to reconstruct the railway for commercial purposes. In the agreement signed at Peking on December 22, 1905, as a corollary to the Portsmouth Treaty, Article VI dealt with this railway as follows:—

> "The Imperial Chinese Government agrees that Japan has the right to maintain and work the military railway line constructed between Antung and Moukden and to improve the said line so as to make it fit for the conveyance of commercial and industrial goods of all nations. The term for which such right is conceded is fifteen years from the date of the completion of the improvements above provided for. The work of such improvement is to be completed within two years, exclusive of a period of twelve months during which it will have to be delayed owing to the necessity of using the existing line for the withdrawal of troops. The term of the concession above mentioned is therefore to expire in the 49th year of Kuang Hsu. At the expiration of that term, the said railway shall be sold to China at a price to be determined by appraisement of all its properties by a foreign expert who will be selected by both parties. The conveyance by the railway of the troops and munitions of war of the Chinese Government prior to such sale shall be dealt with in accordance with the regulations of the Chinese Eastern Railway. Regarding the manner in which the improvements of the railway are to be effected, it is agreed that the persons undertaking the work on behalf of Japan shall consult with the Commissioner despatched for the purpose by China. The Chinese Government will also appoint a Commissioner to look after the business relating to the railway as is provided in the Agreement relating to the Chinese Eastern Railway. It is further agreed that detailed regulations shall be concluded regarding the tariffs for the carriage by the railway of the public and private goods of China."

Against the fulfilment of this agreement China interposed obstructions regarding reconstruction and policing, and on June 24, 1909, sent a note to Japan disagreeing to the widening of the gauge, and raising other points. Japan then decided to adopt a strong attitude and on August 6 notified the Chinese that she intended to reconstruct the line, despite what the Peking Government might say or do. On August 13 the Chinese Government replied and from that reply the Japanese Government were justified in assuming that China was fully prepared to recognize the immediate necessity of reconstructing the line and that she desired to render all necessary co-operation in carrying out the undertaking. The Japanese Government thereupon instructed Consul-General Koike, at Mukden, to sign a Memorandum with Viceroy Hsi Liang and Governor Cheng to the following effect:—

> 1.—The same gauge as that of the Peking-Mukden Railway shall be adopted.
>
> 2.—Both Japan and China shall recognize and approve, on the whole, the line as already surveyed and agreed to by the Commissioners of the two Governments, but the location of that portion of the line from Chen-hsiang-tun to Mukden shall remain to be decided by mutual conference between the two countries.
>
> 3.—On and from the date when the Memorandum is signed, negotiations for the purchase of land and for the adjustment of all other details shall be instituted.
>
> 4.—From the day following the signing of the Memorandum, that is from the day after the negotiations above mentioned are instituted, the work of reconstruction shall be accelerated.
>
> 5.—China shall instruct the local officials along the line to give every facility regarding the execution of the work.

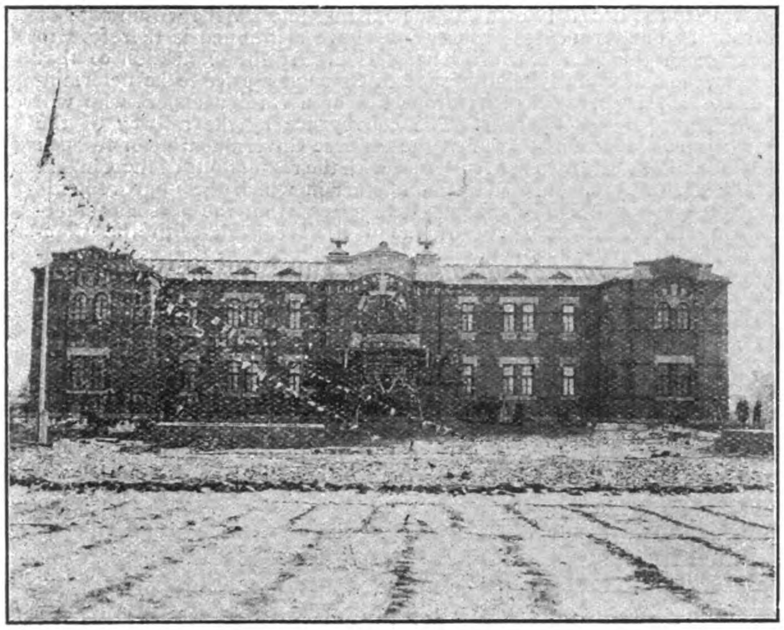
It is significant that not one official protest was raised by any Power against Japan's move, and it disclosed the fact that China had alienated her best friends and stood alone.

The reconstruction of the line was recommenced in August, 1909, and proceeded so rapidly that the Mukden-Shihchiaotsu section (35 miles) was opened for traffic on November 3 of the same year; the Antung-Chikuanshan section on November 3, 1910; the Shihchiaotsu-Penhshiu section on January 15, 1911, and the remaining section from Penhshiu to Chikuanshan (73 miles), notwithstanding considerable engineering difficulties that had been almost constantly met with, so remarkable a progress was made that the whole work was completed on November 1, 1911, on which day was celebrated the completion of the conversion of the whole line. At the same time the Company made an arrangement with the Chosen (Korean) Railway for through express passenger service.

On November 2, 1911, an agreement was made to settle points connected with the effecting of direct traffic connections between the Antung-Mukden and the Korean railways. In this agreement it was stipulated for railway purposes that the centre of the bridge over the Yalu River should be regarded as the boundary line between Korean and Chinese territory.

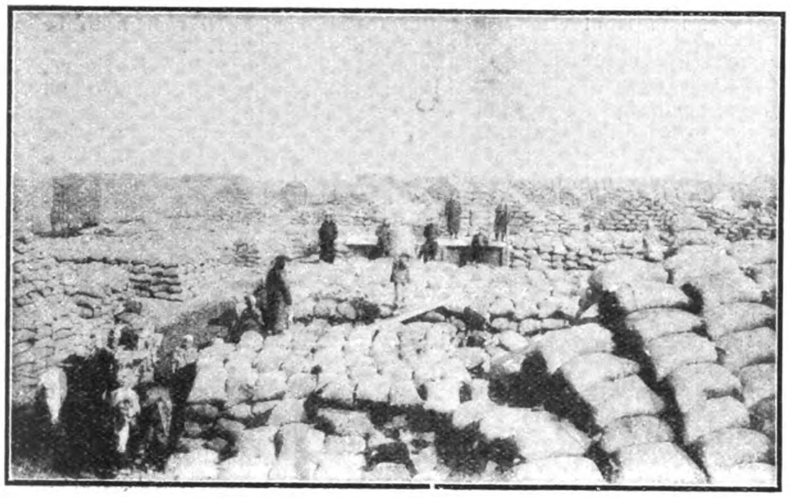
Hsinmintun-Mukden and Kirin-Changchun Railways

China being desirous of acquiring the railway constructed by Japan between Hsinmintun and Mukden, to link up with the Peking-Mukden system, and Japan being desirous of extending her railway influence eastwards from Changchun to Kirin and beyond, an agreement was come to between the two parties with regard to the former two on April 15, 1907, and a further one regarding the Kirin-Changchun line on August 12, 1909. The Chientao Convention, signed later, also refers to the extension of the Kirin-Changchun Railway eastwards to Korea.



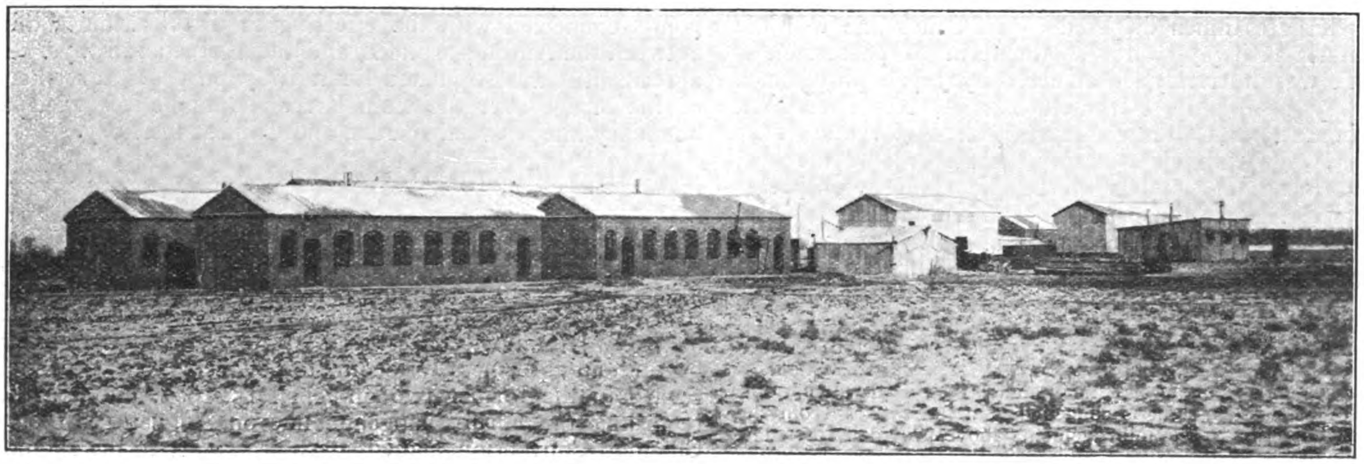
Kirin-Changchun Railway Offices.

First Class Station on Kirin-Changchun Line.



Beans Awaiting Transportation.

Sacking Beans at Changchun.



Storehouse at Changchun.

Acting on the agreements concluded with regard to the Kirin-Changchun railway, work was commenced in February, 1910, and traffic was opened in October, 1912. The Capital was Tls. 3,600,000. The line is 80 miles in length, and the gauge is the standard one.

The agreement signed on April 16, 1907, is as follows:—

Consuke Hayashi, Envoy Extraordinary and Minister Plenipotentiary of Japan, and Na T'ung, Ch'u Hungchi and Tang Shao-i, Ministers of the Imperial Chinese Board of Foreign Affairs, having been appointed thereto by their respective Governments, have agreed upon the following articles:

1.—The Chinese Government being desirous of purchasing the Hsinmintun-Mukden Railway, constructed by Japan, hereby agrees that the purchase price thereof shall be Japanese gold yen 1,660,000, to be paid through the Yokohama Specie Bank at Tientsin.

The status of this railway shall be changed by the Chinese Government to that of the lines built by China herself, and it is agreed that one-half of the capital needed for that part of the line east of the Liao River shall be borrowed from the Southern Manchurian Railway Company.

2.—The Chinese Government, being about to construct a railway line herself from Kirin to Kwangchengtze, agrees to borrow from the aforesaid Company one-half of the capital needed for this work.

3.—The conditions of the loans provided for in Articles 1 and 2, with the exception of the periods within which they are to be repayable, shall be in all respects similar to those of the Loan Contract of the railways inside and outside Shan-hai-kuan. The most important conditions are mentioned below. The regulations for the management of the railway line shall correspond with the methods at present employed by the General Office of the railway lines inside and outside Shan-hai-kuan.

(a) The periods within which the loans shall be repaid shall be for that part of the Hsinminting-Mukden line east of the Liao River, eighteen years, and for the Kirin-Kwangchengtze line twenty-five years.

No repayment in full of these loans shall be allowed before the expiration of the periods named.

(b) The security for the loan from the Southern Manchurian Railway Company for that part of the Hsinmin-Mukden line east of the Liao River shall be the real property of the aforesaid section and its earnings.

The security for the mercantile shares to be issued by the Kirin-Kwangchengtze Railway Administration, as well as for the loan to be made from the Southern Manchurian Railway Company, shall be the real property of the said railway and its earnings.

So long as these loans are not repaid by the Chinese Government, the aforesaid property and earnings of the above-named lines shall not be pledged as security for any other loan.

During the periods of these loans the Chinese Government agrees that the buildings, machinery, rolling-stock and road bed of the section of the Hsinmin-Mukden Railway east of the Liao River, and of the Kirin-Kwangchengtze Railway, shall be kept in good condition, and furthermore that such additions will be made to the rolling-stock from time to time as may be required to satisfy the demand of the traffic.

If the Kirin-Kwangchengtze line should hereafter build branch lines or an extension, the construction of such lines shall rest of right with the Chinese Government, but if there should be a lack of capital, application shall be made to the Southern Manchurian Railway Company for an arrangement. Should China, however, appropriate funds herself for the construction of any other railway lines than those mentioned, it shall not concern the Southern Manchurian Railway Company.

(c) The loans and the interest thereon are guaranteed by the Chinese Government, and should there be any failure to make payment of interest or re-payment of principal at the proper periods, the Company shall at once notify the Chinese Government, which shall pay over to the Company the amount of the shortage. If the Chinese Government, after such notification by the Company, shall be unable to make good the deficit in the payments of principal or interest, the line in question with its real property shall be handed over to the temporary control of the Company until the shortage is made good, after which it will be returned to the control of the Railway Administration.

If, however, the shortage be for a small amount only, an extension of time shall be granted as an accommodation, but never for more than three months.

(d) During the periods of these loans the Engineer in Chief employed shall be a Japanese, and should there be an insufficient supply of Chinese for the various posts in the service of the railways, Japanese may be employed with the Chinese. If at any time it shall become necessary to change the Engineer in Chief, consultation must first be had with the (Southern Manchurian Railway) Company before appointment may be made. There shall also be appointed one Japanese Accountant, who must be thoroughly qualified, and who shall have entire responsibility for the arrangement and oversight of the various accounts of the railways, but in his supervision of receipts and expenditures he must consult and act with the Director-General.

(e) The railways mentioned being Chinese Government lines, the latter shall have the right to transport soldiers and subsistence over either line free of charge whenever military affairs or measures of relief shall require.

(f) All earnings of the railways in question must be deposited in Japanese banks. As to the terms upon which such deposits shall be made, satisfactory arrangements shall be agreed upon by the parties concerned when the loan contracts are drawn up.

4.—The Chinese Government, immediately after the purchase of the present Hsinmin-Mukden Railway, shall enter into a contract with the Southern Manchurian Railway Company for the loan in connection with that section of the line east of the Liao River, and shall also appoint and direct a Chinese engineer to consult and act with the Japanese engineer in making a survey of the Kirin-Kwangchengtze line to furnish a basis for estimating the amount of the loan needed for the construction of the line, and within six months after the completion (of the survey) shall enter into a contract with the Southern Manchurian Railway Company for the loan.

5.—The lines from Hsinmin to Mukden, and from Kirin to Kwangchengtze, under the management of China, must connect with the Southern Manchurian Railway line. The Tientsin-Shan-hai-kuan Railway Administration and the Southern Manchurian Railway Company shall appoint representatives to consult together and draw up the necessary regulations.

6.—The rate at which the loans specified in Articles 1 and 2 shall be issued, shall be determined fairly in accordance with the terms of the most recent loan negotiated by China with any foreign country.

7.—Within one month after the payment of the purchase price of the Hsinmin-Mukden Railway the Chinese Railway Administration shall appoint officers to take control of the sums.

Japanese Calendar, Meiji XLth Year, fourth Month, 15th Day.

Chinese Calendar, Kuanghsu XXXIIIrd Year, Third Moon, 3rd Day (April 15, 1907).

The following supplementary agreement concerning the Kirin-Changchun Railway was signed at Peking, November 12, 1908; and approved by Imperial Rescript of December 27, 1908, in reply to a Memorial of the Board of Posts and Communications.

According to Article IV of the Hsin-Feng (Hsinmintun-Mukden) and Chi-Chang (Kirin-Changchun) Railway Agreement between the two Governments of Japan and China, dated Ming Chih 40th year, 4th month, 15th day, Kuanghsu 33rd year, 3rd month, 3rd day (April 15, 1907), it was agreed that before settling the loan contract for the said railways, the two governments should draw up a supplementary agreement regarding matters not settled in the original agreement.

Now the two officials designated below have concluded the following agreement:—

Article I—It is agreed by Articles I and II of the Hsin-Feng and Chi-chang Railway Agreement between the Governments of Japan and China (hereafter to be called the "Agreement") that half of the capital needed for that portion of the Chin-Feng (Peking-Mukden) Railway lying east of the Liao River amounting to Yen 320,000, and half of the capital needed for the Chi-Chang Railway amounting to Yen 2,150,000 should be borrowed from the Southern Manchuria Railway Company.

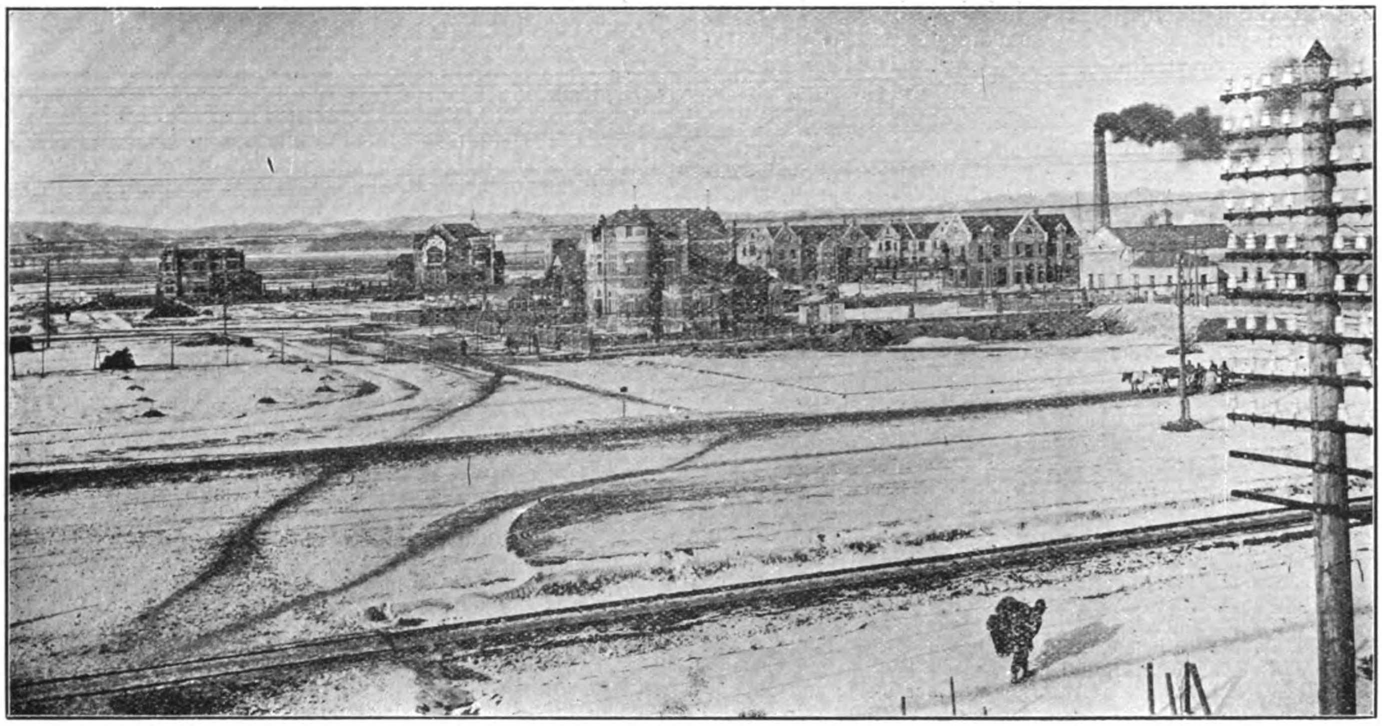
Article II—The interest on this loan shall be at the rate of five per cent (5% per annum).

Article III—The actual rate at which the loan shall be realised shall be 93 for every 100 as agreed upon in Article VI of the Agreement.

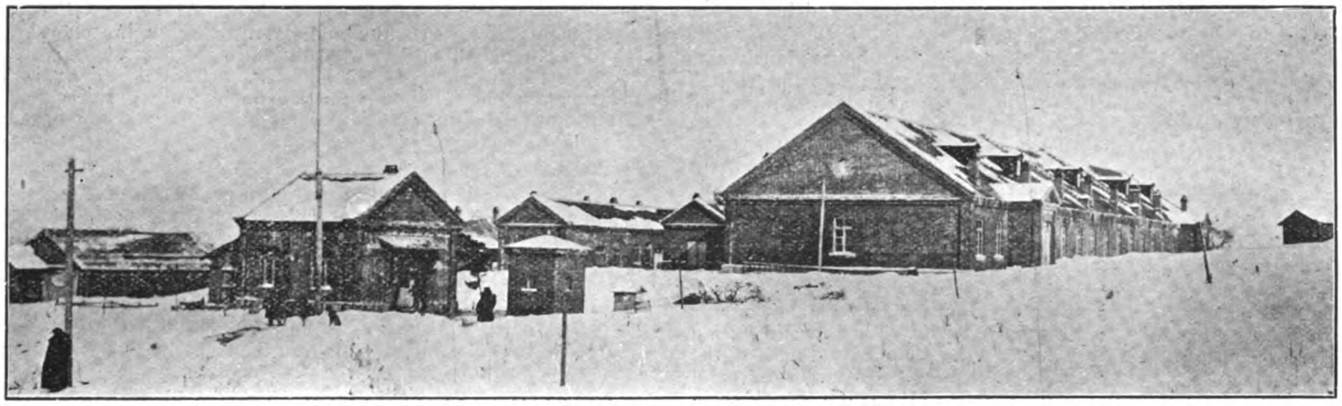
Article IV—It is stipulated in Article III of the Agreement that during the term of the loan, the Chinese Government shall employ a Japanese Engineer-in-Chief for that portion of the Ching-Feng Railway which lies East of the Liao River. For the present the Japanese Engineers now in the employ of the Chin-Feng Railway may continue to act and as at present will continue to be under the control of the Director and Engineer-in-Chief of the Chin-Feng Railway. If in future changes are made in the engineering staff, as provided in the Agreement, application shall be made to the Southern Manchuria Railway which will make appointments after full consultation. The status of these engineers shall be as stated above.

Article V—Since it is difficult for the Chinese Government to keep separate accounts for that portion of the Chin-Feng Railway which lies East of the Liao River, the Japanese Government consents that no Japanese accountants shall be specially appointed and the Japanese Government consents that the Chinese Government shall set aside monthly a sum calculated to be sufficient for the monthly payment of capital and interest on the amount of the loan for the said section of railway. This sum shall be deposited on the first day of every month in some Japanese Bank in China designated by the South Manchuria Railway Company. This deposit shall be regarded as a sinking fund for the redemption of the capital and interest of the loan when due. The manner of making the payments of the capital and interest of the loan when due, and the interest which shall be allowed by the Bank on the sums deposited shall be decided when the detailed loan contract is drawn up. The Chinese Government also consents that the monthly balance sheets for the whole Chin-Feng Railway line and the annual exact statement of accounts in English shall be sent monthly and annually to the South Manchuria Railway Company for inspection.

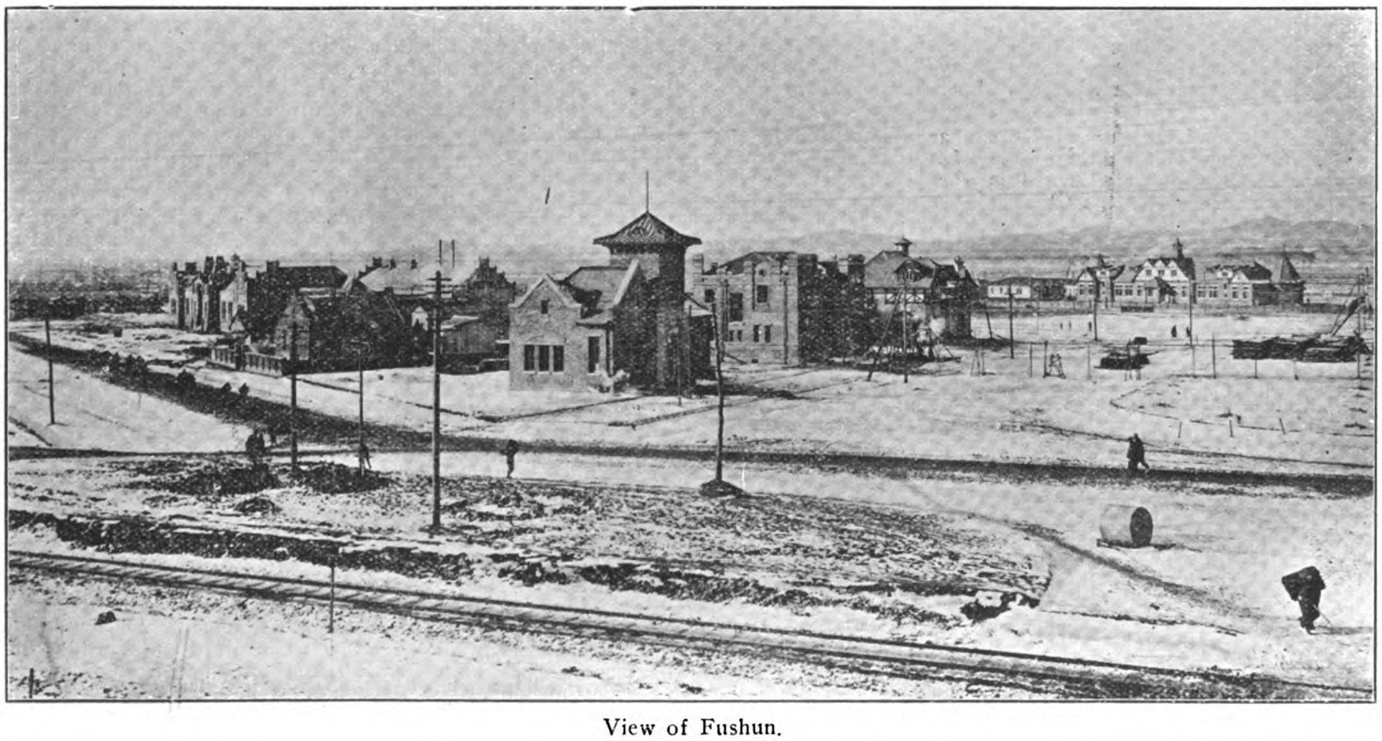
Article VI—The Engineer-in-Chief and the Accountants of the Chi-Chang Railway should all be Japanese as provided in Article III of the Agreement. The method of appointment shall be as follows: The Chinese Government shall select a well-trained and capable Engineer-in-Chief and appoint him after full consultation with the South Manchuria Railway Company. The Accountants shall be selected by the South Manchuria Railway Company and after consultation with the Chinese



Fushun Colliery, Operated by the South Manchuria Railway.



Barracks for Troops at Fushun.



View of Fushun.

Government the Chinese Government shall appoint them. If in future it shall be necessary to change the Engineer-in-Chief or Accountant, there must be consultation with the South Manchuria Railway Company according to the Agreement and the appointments must be made as arranged above.

Article VII—The Special Loan Contract must conform with the stipulations of the Agreement and of this Supplementary Agreement. It will be drawn up between the South Manchuria Railway Company and an official appointed by the Board of Posts and Communications. This Supplementary Agreement, will be in force when ratified by the two Governments.

Signed at Peking, Ming Chih 41st year, 11th month, 12th day, Kuanghsu 34th year, 10th month, 19th day (November 12, 1908), by

(signed) Moritaro Abe
First Secretary of Legation.
Liang Shih-yi,
Director of the Head Railway Office of the Board of Posts and Communications.

Article VI of the Chientao convention says:—

The Government of China shall undertake to extend the Kirin-Changchun Railway to the southern boundary of Yenchi, and to connect it with Hoiryong with a Korean railway, and such extension shall be effected upon the same terms as the Kirin-Changchun railway. The date of commencing the work of the proposed extension shall be determined by the Government of China, considering the actual requirements of the situation, and upon consultation with the Government of Japan.

It is interesting to note that on July 11/24, 1902, an agreement, which did not become effective, was signed with regard to the "construction and management of the Kirin-Changchun railway by the Chinese Eastern Railway Company, with the express object of encouraging the trade of the city of Kirin."

According to this agreement it was intended to have a Supervising Commission appointed, the General Director of which was to have been the Tartar-General of Kirin, "for the supervision of the construction of this railway in a thorough and honest manner." Article 7 provided that at the expiration of 36 years the Chinese Government should have the right to repurchase the railway, and Article 13 provided that on the day of the approval of the agreement at Peking the Chinese Eastern Railway Company should deliver to the Tartar-General of Kirin 350,000 roubles.

At the Sino-Japanese Conference held at Peking on Tuesday, March 23, China agreed to hand the control and administration of the Kirin-Changchun railway over to Japan.

THE LEASED TERRITORY OF LIAOTUNG

Now that China has definitely agreed to extend the lease of the portion of the Liaotung or Kwangtung Peninsula which was taken over by Japan from Russia after the war of 1904-5, it is interesting to recall the historical associations of Japan with this part of China's dominions. In the war which broke out between China and Japan in July, 1894, principally, so Japan averred, to secure Korea's independence, the Japanese forces obtained success on land and sea. The Chinese fortress at Port Arthur was taken, and the Japanese fought their way as far north as Liaoyang. It speedily became apparent that China was no match for Japan and she therefore made overtures for peace. Japan was in such a favourable position that she was able to impose extremely harsh conditions. She compelled the recognition by China of the independence of Korea, the payment of a war indemnity of Tls. 200,000,000, the opening of four additional ports to trade, extended navigation rights for Japanese vessels in Chinese inland waters, and the cession of the southern portion of Fengtien, the island of Formosa and the Pescadores group of islands. The article of the Treaty of Peace signed at Shimonoseki on April 17, 1895, relating to the cession in territory may be quoted in full:—

> China cedes to Japan in perpetuity and full sovereignty the following territories, together with all fortifications, arsenals, and public property thereon:—
>
> (a). The southern portion of the Province of Fengtien within the following boundaries:—
>
> The line of demarcation begins at the mouth of the River Yalu, and ascends that stream to the mouth of the River Anping; from thence the line runs to Fenghuang; from thence to Haicheng; from thence to Yingkow, forming a line which describes the southern portion of the territory. The places above named are included in the ceded territory. When the line reaches the River Liao at Yingkow it follows the course of that stream to its mouth, where it terminates. The mid-channel of the River Liao shall be taken as the line of demarcation. This cession also includes all islands appertaining or belonging to the Province of Fengtien situated in the eastern portion of the Bay of Liaotung, and in the northern part of the Yellow Sea.
>
> (b). The Island of Formosa, together with all islands appertaining or belonging to the said Island of Formosa.
>
> (c). The Pescadores Group, that is to say all islands lying between the 119th and 120th degrees of longitude east of Greenwich and the 23rd and 24th degrees of north latitude.

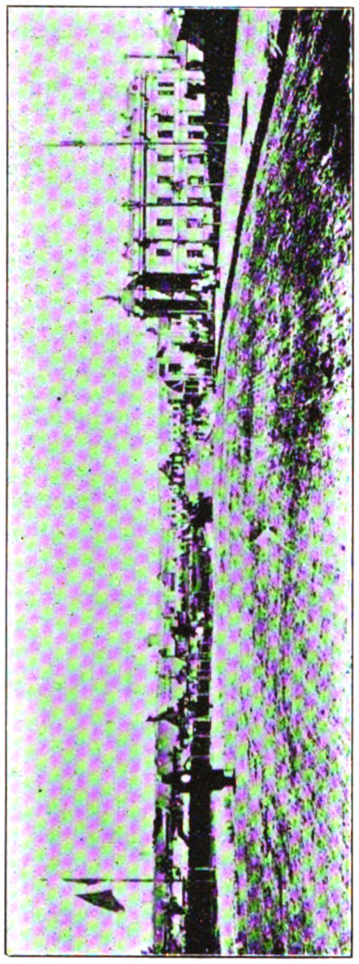
It will be noted that it was not a lease of this territory in Manchuria that Japan secured, but an unqualified cession. Had there been no intervention by other Powers the southern portion of the Province of Fengtien would be now portion of the Japanese Empire. But Japan had not to deal with China alone. For many years the European Powers had been in a state of anxious indecision in regard to the military capacity of China. In the light of present day knowledge it seems almost ludicrous that so profound was the ignorance in Europe of the internal condition of China that there was a very real dread of provoking her to military action. When Japan had demonstrated that under the rule of the dying Manchu dynasty China had been allowed to sink into a condition of pathetic helplessness and lack of national unity Europe concluded that the Empire was about to fall asunder. Japan, it was decided, should not be allowed to reap the full fruits of her victory. It must be remembered that Japan at that time was far from being a world Power. In fact her steady and methodical assimilation of Western civilization and the development of her military and naval forces on modern lines had attracted but little attention. Her successful emergence from the conflict with China did not inspire most of the Western Powers with an appreciation of the growing strength of Japan so much as a recognition of the weakness of China. Russia in view of her own aspirations for a warm water port, was not willing that southern Manchuria should pass into the possession of a nation that was at least stronger than China. It was represented to Japan that it was considered inimical to the peace of the Far East that any portion of the mainland of China should be ceded to another Power, and Japan, under duress, by a convention signed on November 8, 1895, retroceded the southern portion of the Province of Fengtien, accepting Tls. 30,000,000 as compensation.

As a matter of record it will be as well to quote the remonstrance that was addressed by Russia to Japan on this occasion.

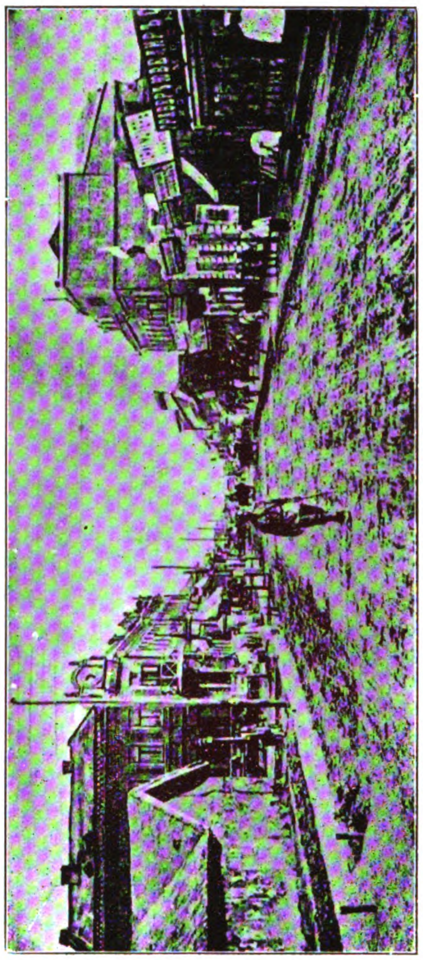
> The Government of his Majesty the Emperor of all the Russias, in examining the conditions of peace which Japan has imposed on China, finds that the possession of the peninsula of Liaotung, claimed by Japan, would be a constant menace to the capital of China, would at the same time render illusory the independence of Korea, and would henceforth be a perpetual obstacle to the permanent peace of the Far East. Consequently, the Government of his Majesty the Emperor would give a new proof of their sincere friendship for the Government of his Majesty the Emperor of Japan by advising them to renounce the definitive possession of the peninsula of Liaotung.

When, in 1904, Japan went to war with Russia she repeated her triumphs of ten years earlier, but on an immeasurably greater scale. Port Arthur was again taken and the Russian armies were forced north of Tiehling. By the Treaty of Portsmouth Japan became possessed of Russia's rights in Southern Manchuria. Article V. of the Treaty is as follows:—

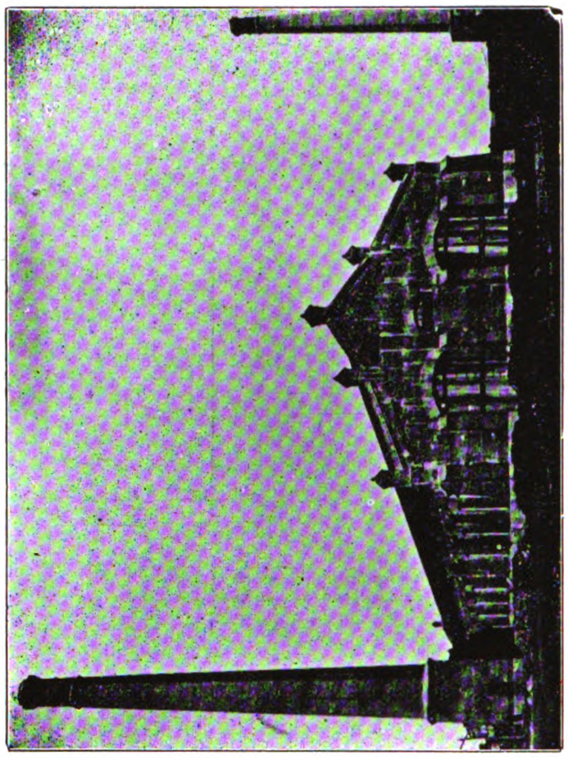
> The Imperial Russian Government transfer and assign to the Imperial Government of Japan, with the consent of the Government of China, the lease of Port Arthur, Talien, and adjacent territory and territorial waters, and all rights, and privileges, and conces-



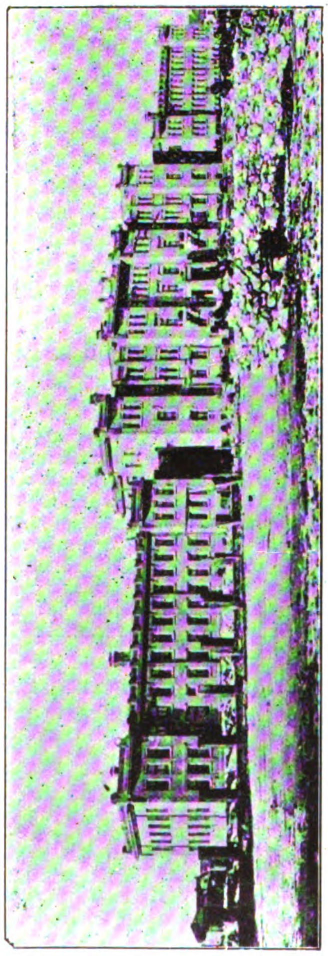
Street Scenes in Harbin.



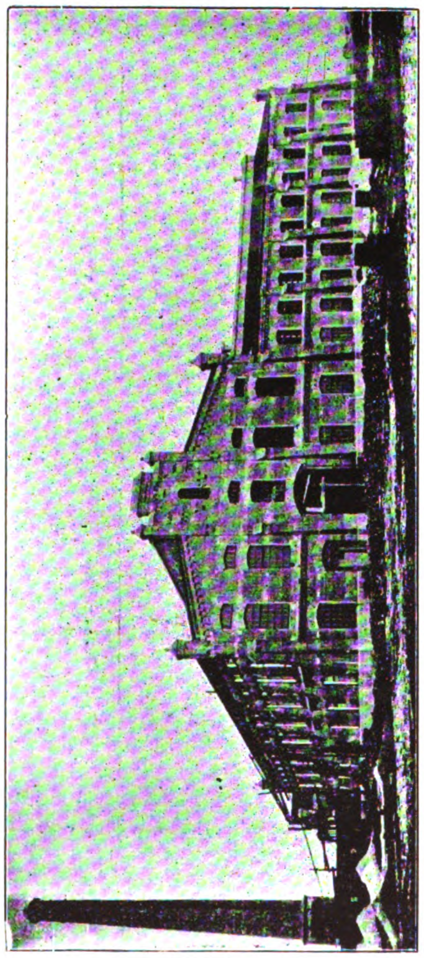
Harbin's Main Street.



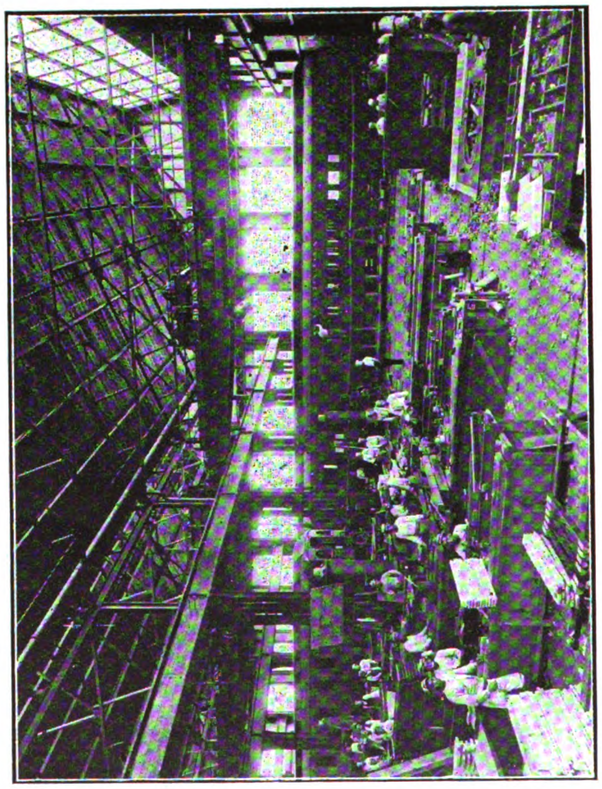
Machine Shops of Chinese Eastern Railway.



Administration Building at Harbin.



Chinese Eastern Railway Shops at Harbin.



Passenger Carshops at Harbin.

sions connected with or forming part of such lease, and they also transfer and assign to the Imperial Government of Japan all public works and properties in the territory affected by the above mentioned lease.

The two High Contracting Parties mutually engage to obtain the consent of the Chinese Government mentioned in the foregoing stipulation.

The Imperial Government of Japan on their part undertake that the proprietary rights of Russian subjects in the territory above referred to shall be perfectly respected.

It was to secure continued enjoyment of the rights which she gained by the Treaty of Portsmouth that Japan prevailed upon China to extend her tenure of occupancy of the territory in question. That China would consent to the extension of the lease of Port Arthur and Dalny was generally anticipated. The Japanese have expended vast sums of money in the improvement of Dalny, and those who have visited the port of late have been impressed by the wonderful progress that has been made in the last ten years. In view of the money spent and the magnitude of the interests created it was not to be expected that Japan would willingly consent to surrender the fruits of her enterprise until she had enjoyed them for a longer period than was provided for in the original Convention between China and Russia. Moreover, it is certain that Russia, if she had retained the Leased Territory, would have sought an extension of the lease. Article III of the Convention made provision for this extension. While it may be asserted with confidence that all the Treaty Powers look with distrust and suspicion upon the action of Japan in taking advantage of the European complications to gain a paramount position in China, it may also be said it is doubtful if one of them has any objection to Japan continuing in enjoyment of the benefits accruing from the conditions she has herself created in the Leased Territory.

The circumstances under which Japan gained, lost and regained the rights and privileges she now possesses in South Manchuria have already been related. From a Japanese point of view, no doubt, China has little ground for complaint at the occupation upon lease by Japan of an area considerably smaller than that secured by Japan by the Treaty of Shimonoseki. The territory, the lease of which has now been extended, is defined in the additional agreement between China and Russia signed at St. Petersburg on May 7, 1898. The two Agreements upon which Japan's rights were based were never made public by Russia, but what are believed to be authentic versions have appeared in British Parliamentary Blue Books. We reproduce them here.

CONVENTION BETWEEN RUSSIA AND CHINA FOR LEASE TO RUSSIA OF PORT ARTHUR, TALIENWAN, AND THE ADJACENT WATERS

(Signed at Peking, March 27, 1898)

On the 6th day of the 3rd moon of the 24th year of Kuang Hsu (27th March, 1898), His Majesty the Emperor of China especially deputed the Grand Secretary Li, and the Vice-President of the Board of Revenue Chang, as Plenipotentiaries to settle the matters connected with the lease of Port Arthur and Talienwan, with Russian Charge d'Affaires Pavloff.

The Convention drawn up was as follows:—

Article I. In order for the protection of the Russian fleet, and (to enable it) to have a secure base on the north coast of China, His Majesty the Emperor of China agrees to lease to Russia Port Arthur, Talienwan, and the adjacent waters. But this lease is to be without prejudice to China's authority in that territory.

Article II. The boundary of the territory leased in pursuance of the foregoing extends from Talienwan northward in accordance with the requirements (of the situation) on land, and of the protection of the territory, and permission shall be given for its being placed at whatever distance may be necessary.

The exact boundary and the other details of this Convention, shall be jointly arranged at St. Petersburg with Hsu Ta-jen, after the signature of this Convention, with all possible expedition, and a separate special Article drawn up. After the boundary has been decided, all the territory included in it, and the adjacent waters shall be entirely handed over to Russia to use under lease.

Article III. The term of lease is fixed as twenty-five years from the date of signature. On expiration an extension of the term may be arranged between the two countries.

Article IV. Within the term fixed, in the territory leased to Russia, and in the adjacent waters, all movements of forces, whether naval or military, and (the appointment of) high officials to govern the districts, shall be entirely left to Russian officers, one being made responsible, but he is not to have the title of Governor-General or Governor.

No Chinese troops of any kind whatever are to be allowed to be stationed within this boundary. Chinese within the boundary may leave or remain at their pleasure, and are not to be driven away.

Should any criminal cases occur, the criminal is to be handed over to the nearest Chinese official to be punished according to law, in accordance with the arrangement laid down by the VIII. Article of the Russian-Chinese Treaty of the 10th year of Hsien Feng (1860).

Article V. To the north of the territory leased there shall be left a piece of territory, the extent of which is to be arranged by Hsu Ta-jen and the Russian Foreign Office. This piece is to be entirely left to Chinese officials, but no Chinese troops are to enter it, except after the arrangement with Russian officials.

Article VI. The Governments of the two countries agree that, as Port Arthur is solely a naval port, only Russian and Chinese vessels are to be allowed to use it, and it is to be considered a closed port as far as the war and merchant-vessels of the other Powers are concerned. As to Talienwan, with the exception of a part within the port which, like Port Arthur, is to be reserved for the use of Russian and Chinese men-of-war, the remainder is to be a trading port, where the merchant vessels of all countries can freely come and go.

Article VII. Russia definitely recognizes the territory leased but Port Arthur and Talienwan are of special importance. (As to) provision of funds, she will herself erect what buildings are required for the naval and military forces, for the erection of batteries, or barracks for the garrisons, and generally provide all the funds required.

Article VIII. The Chinese Government agree that the principle of the permission given in the 22nd year of Kuang Hsu (1896) to the Manchuria Railway Company for the construction of a railway shall now, from the date of signature, be extended to the construction of a branch line from a certain station on the aforesaid main line to Talienwan, or, if necessity requires, the same principle shall be extended to the construction of a branch line to a convenient point on the sea-coast in the Liaotung Peninsula, between Yingtzu (Newchwang) and the Yalu River.

The provisions of the Agreement of the 8th September, 1896, between the Chinese Government and the Russo-Chinese Bank shall be strictly observed with regard to the branch line above mentioned. The direction of the line and the places it is to pass shall be arranged by Hsu Ta-jen and the Manchurian Railway Company. But this railway concession is never to be used as a pretext for encroachment on Chinese territory, nor to be allowed to interfere with Chinese authority or interests.

Article IX. This convention shall come into force from the date of exchange (sic) by the Plenipotentiaries of both countries. After Imperial ratification exchange shall take place at St. Petersburg.

ADDITIONAL AGREEMENT DEFINING BOUNDARIES OF LEASED AND NEUTRALIZED TERRITORY IN LIAO-TUNG PENINSULA

(Signed at St. Petersburg, 7th May, 1898.)

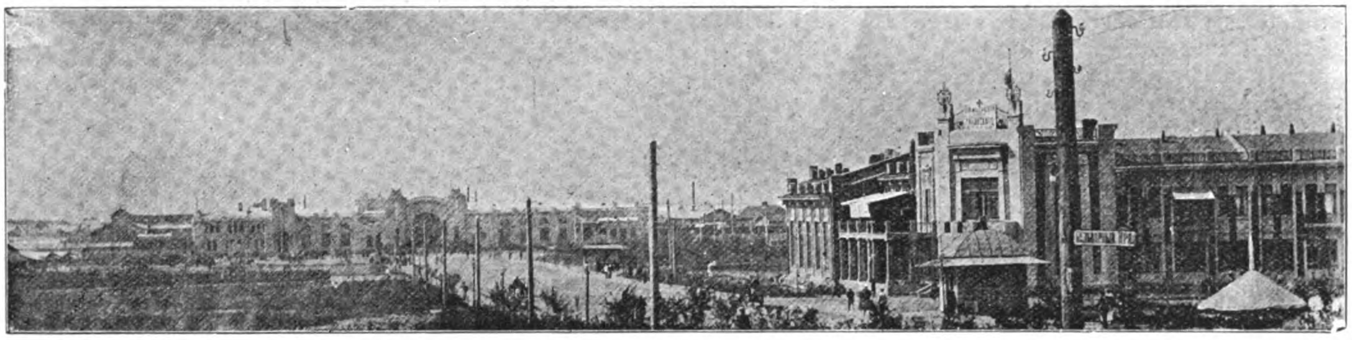
The Governments of Russia and China being desirous of adding some stipulations to the Treaty concluded at Peking on the 15th March, 1898 (Russian Calendar) the Plenipotentiaries of both Governments have agreed upon the following:—

Article I. In accordance with the IInd Article of the original Treaty the northern territory leased and yielded to Russia—Port Arthur, Talienwan, and the Liao-tung Peninsula—shall commence from the north side of A-tang Bay on the west coast of Liaotung and shall pass through the ridge of A-tang Mountain (the mountain ridge being included in the leased ground) to the east coast of Liaotung near the north side of P'itzuwo Bay. Russia shall be allowed the use of all the waters adjacent to the leased territory and all the islands around it. Both countries shall appoint special officers to survey the ground and determine the limits of the leased territory.

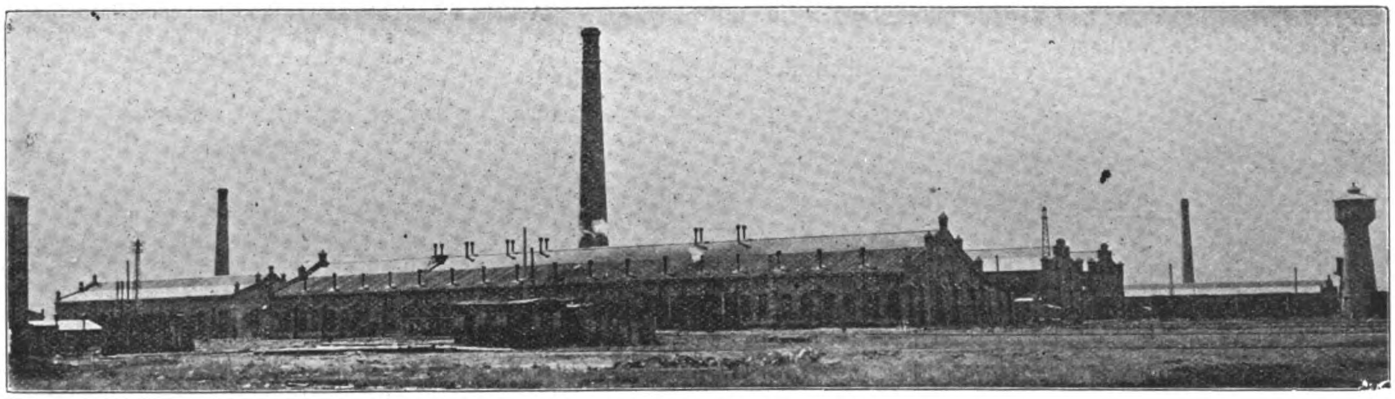
Article II. To the north of the boundary fixed in Article I, there shall, in accordance with Article V of the Peking Treaty, be a neutral ground, the northern boundary of which shall commence on the west coast of Liaotung at the mouth of Kaichou River, shall pass north of Yuyenchang to the Tayang River, and follow the left bank of that river to its mouth, which shall be included in the neutral territory.

Article III. The Russian Government consents that the terminus of the branch line connecting the Siberian Railway with the Liaotung Peninsula shall be at Port Arthur and Talienwan, and at no other port in the said peninsula. It is further agreed in common that railway privileges in districts traversed by this branch line shall not be given to the subjects of other Powers. As regards the railway which China shall (may) herself build hereafter from Shanhaikuan in extension to a point as near as (lit. nearest to) possible to this branch line, Russia agrees that she has nothing to do with it.

Main Administration Building of Chinese Eastern Railway at Harbin.



Main Street of Harbin, leading to Railway Station.



Chinese Eastern Railway Car Shops at Harbin.

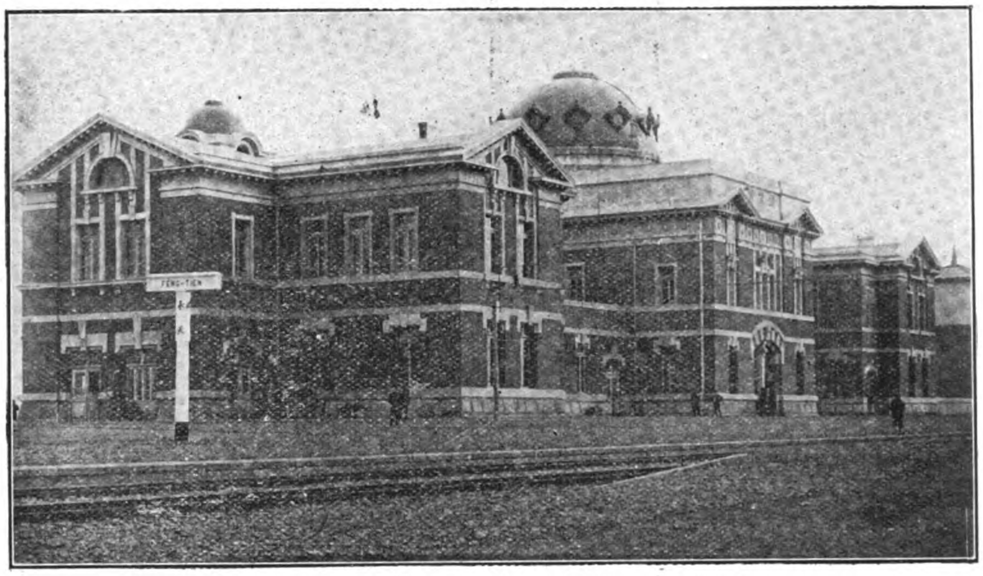
Typical Station on Chinese Eastern Railway.

Article IV. The Russian Government assents to the request of the Chinese Government that the Administration and police of the City of Kinchow shall be Chinese. Chinese troops shall be withdrawn from Kinchow and replaced by Russian troops. The inhabitants of the city have the power to use the roads from Kinchow to the north boundary of the leased territory, and the waters usually required near the city but they have no power to use the sea-coast round about.

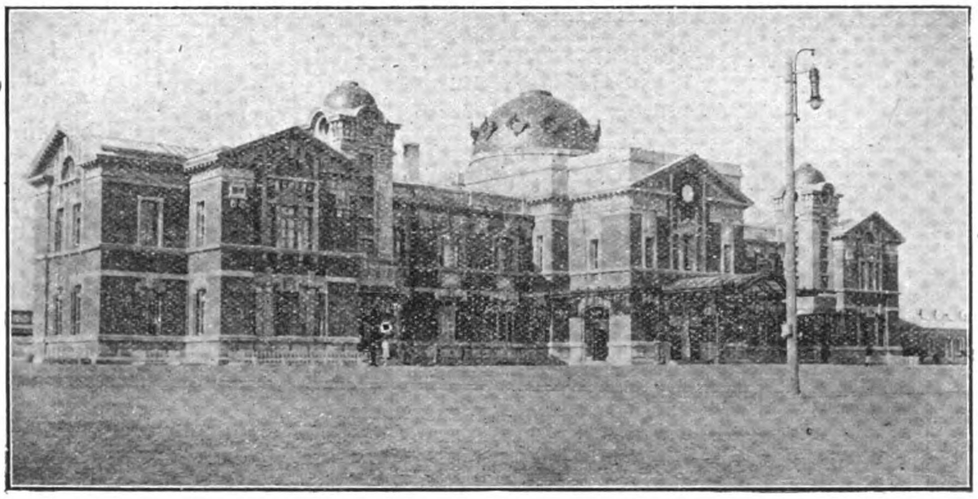
Article V. The Chinese Government agrees (lit. agrees to recognize) 1. That without Russia's consent no concession will be made in the neutral ground for the use of subjects of other Powers. 2. That the ports on the sea-coast east and west of neutral ground shall be not opened to the trade of other Powers. 3. And that without Russia's consent no road and mining concessions, industrial and mercantile privileges shall be granted in the neutral territory.

The extension of the lease of the portion of the Liaotung Peninsula under Japanese jurisdiction is of no great importance from a strategic point of view. Now that Japan has full possession of Korea the value of Port Arthur as a naval base has diminished, if it has not entirely disappeared. But commercially the retention by Japan of Dalny, the most favourably situated and in many ways the best of ports serving the Three Eastern Provinces, is of the first importance. Unless and until the port of Newchwang be improved, the bulk of the trade of South Manchuria must pass through Dalny. Apart from its natural advantages the Japanese have provided every possible facility for the handling and storing of produce and cargoes at Dalny. Even those least enamoured of Japanese methods are fain to confess that they have left nothing undone at Dalny to attract trade. The safety of the harbourage has been secured regardless of expense, warehousing accommodation on the most generous scale has been provided and the South Manchuria Railway Company has done everything that would facilitate the handling of goods from oversea or produce from the interior.

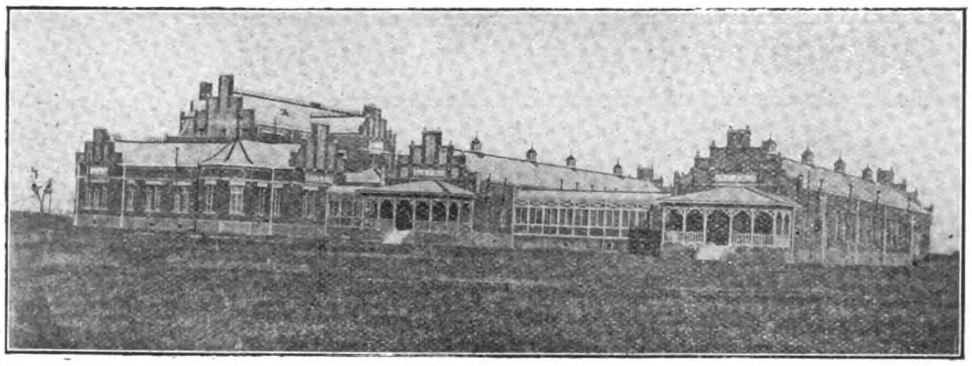
In articles published in the FAR EASTERN REVIEW last year it was pointed out that the soul of Dalny is the South Manchuria Railway. This was not an over-statement of fact. The visitor to the port is everywhere confronted with tangible evidence of the comprehensive character of the Company's activities. Most of the public services, if not all, are operated by the Company. It built the huge Yamato Hotel, which cost a million yen; it established the summer hotel at Hoshigaura, or Star Beach; it operates the water and electricity supply, runs the tramways and in fact supervises nearly all the municipal activities. In view of the intimate association between the port and the railway, the extension of lease if granted to the one had necessarily to be granted to the other.



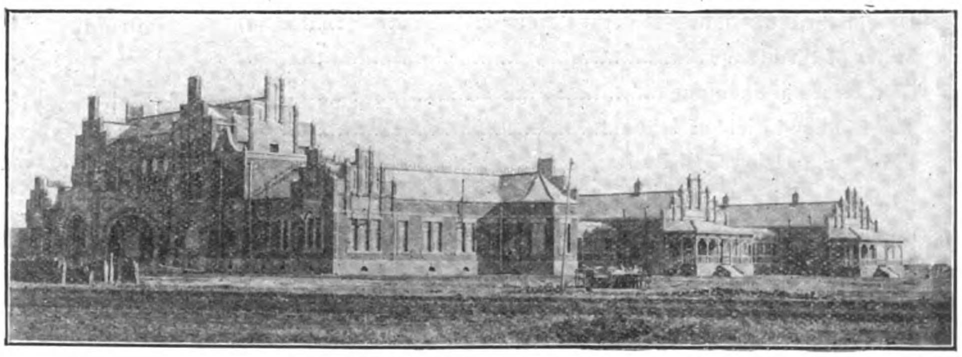
New Station of South Manchuria Railway at Mukden.



Entrance to Yamato Hotel occupying Upper Floors of Station Building.



South Manchuria Railway Hospital at Mukden (side elevation).



Front Elevation of Hospital.

THE FAR EASTERN REVIEW

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THE SINO-JAPANESE NEGOTIATIONS

Japanese diplomacy, it may be said, is on trial. It has sought to establish new rules for international intercourse. When Mr. Hioki, the Japanese Minister at Peking, presented on behalf of his Government twenty-one demands, not to the Chinese Minister for Foreign Affairs, but to the President of the Republic of China, he violated a well-established law governing diplomatic intercourse. No Ambassador or Minister has the right to seek to carry on negotiations with the head of the State to which he is accredited. Were it permissible for this to be done there would be no reason for the existence of Ministries of Foreign Affairs. When it became known that the Japanese Minister, acting no doubt upon instructions from Tokyo, had committed the grave breach of etiquette involved in ignoring the Chinese Ministry of Foreign Affairs, the motive began to be sought for. The search has hitherto been unsuccessful. Several theories have been advanced, but no satisfactory explanation has yet been found. The Japanese could clear up the mystery were they so disposed, but they prefer to emulate the silence of the Sphinx and let it be assumed that they consider themselves superior to rules and regulations by which other nations are content to be bound.

Apart from the negotiations still being carried on in Peking the most significant development has been the intense interest, largely dashed with apprehension, that has been manifested in Great Britain in regard to Japan's real objects. It will be remembered that when a summary of Japan's demands was published in Great Britain and America the Japanese Government, aided materially by its subsidized Press Agency, sought to discredit all reports emanating from Peking. The allegation was made that these reports were gross exaggerations, and that instead of twenty-one demands only eleven had in reality been submitted. This attempt to mislead the Treaty Powers was foredoomed to failure, and it was a matter of surprise to many that the Japanese Government should adopt a course that would inevitably result in its *mala fides* becoming manifest. That this is what has actually happened is evident from the comments made by English and American newspapers and the searching questions that have been asked in the British House of Commons. It has been pertinently asked, and no reply has yet been ventured, why, if Japan's demands are so innocuous she does not consent to their publication. As Japan has not dared to accept the challenge to place her case frankly before the world the conclusion has naturally been drawn that she is seeking to alter the *status quo* in China in a manner that would evoke general condemnation. In Great Britain the conviction is evidently rapidly gaining ground that Japan is seeking to gain a paramount position in China at the expense of the other Powers interested, her ally in particular.

In the last issue of the FAR EASTERN REVIEW the record of the negotiations in Peking between the Japanese Minister and the Chinese Minister of Foreign Affairs was brought up to February 13. It may be as well to remind readers that Japan insisted that in the first instance China should accept all the demands in principle. To this China offered the most strenuous opposition. The Chinese Government recognised that the acceptance even in principle of some of the demands would involve the surrender of China's sovereignty and the establishment in effect of a Japanese protectorate. In view of the newly awakened, but steadily growing sense of nationhood among the Chinese now that they have freed themselves from the shackles of an alien dynasty, consent by the Chinese Government to virtual control by a Power that has never manifested anything but unfriendliness to China, would be the signal for the outbreak of rebellion. This is perfectly well understood by the Japanese Government, and it seems just to assume, therefore, that Japan is deliberately seeking to force the Chinese Government into a position in which it will have to make its choice between a foreign war or civil convulsion. Either would mean ruin to China. The Chinese Government is apparently inspired by the belief that the nations of Europe and America that have vested interests in China will bring pressure to bear upon Japan to prevent the destruction of the new edifice of Government that is being slowly but surely raised amid the ruins of the past régime. In that hope and belief China has refused to agree even in principle to the demands granting Japan

20

paramouncy, while at the same time she has exhibited perfect willingness to discuss those which are, comparatively though not positively speaking, reasonable.

After the postponement of the conference that was to have been held on February 12, there were indications of some indecision on the part of the Japanese. They had apparently placed too much reliance upon their power to force China into a frightened acquiescence to their demands before others interested had learnt their character. On Thursday, February 18, the Chinese Government notified the Japanese Minister that they were willing to resume negotiations in regard to the twelve demands to which reference had already been made. Apparently, however, at this stage the Japanese had not resolved upon the course they would pursue, as Mr. Hioki intimated that he would have to wait instructions from Tokyo. These were not received until February 20 when Mr. Hioki was instructed to inform the Chinese Government that Japan insisted upon the whole of the twenty-one demands being made the basis of negotiation. It was arranged that a conference would be held on the following Monday.

This conference, held on Monday, February 22, did something to clarify the situation. It was attended by the Japanese Minister and the First Secretary of the Japanese Legation on the one hand and the Chinese Minister of Foreign Affairs and the Vice-Minister of Foreign Affairs on the other. The Japanese once again endeavoured to persuade the Chinese to agree in principle to the whole of the twenty-one demands, but without success. Failing in this the Japanese suggested that discussion on the acceptable demands should proceed and that those that were objected to should be postponed for later consideration. To this suggestion the Chinese demurred and a discussion ensued on the first group of demands relating to Shantung. The Chinese presented counter proposals that Japan should fulfill her promise to hand Kiaochou back to China, and that the *status quo* in Shantung should be restored by the withdrawal of Japanese troops and railway guards and the removal of the light railway and telegraph lines erected by the Japanese. These counter proposals were rejected by the Japanese and the conference was postponed until February 25. The conference on February 22 lasted for four hours and a half.

The Shantung demands were again discussed at the conference held on Thursday, February 25. The Chinese representatives announced that their Government had instructed them to inform the Japanese delegates that the Chinese Government would agree to open "certain important places" in Shantung as Treaty Ports, that being in accordance with the policy of the Government as was shown by the voluntary opening of Hulutao, Lungkow, and five other ports in 1914. In regard to the other demands in relation to Shantung it was suggested that discussion should stand over until the conclusion of the European War. The demands in connection with South Manchuria (Eastern Inner Mongolia being refused consideration by the Chinese) were next considered, the discussion centering upon the preamble in which Japan wished China to acknowledge Japan's "special position" in those regions. The Chinese expressed themselves unwilling to agree to this as it would amount to an acknowledgment of Japan's dominance and would be a negation of the principle of equal opportunity for all. This point was still under discussion when the conference adjourned.

On February 28, the discussion in reference to South Manchuria and Eastern Inner Mongolia was resumed. The Chinese maintained that Japan was asking for considerably more than she was entitled to claim by virtue of the rights she took over from Russia. In particular the demand for the conversion of Eastern Inner Mongolia into a Japanese sphere of influence was not justified by reference to any of the agreements or understandings entered into by China with Russia or Japan. The Chinese representatives pointed out that to accede to Japan's wishes would conflict with the Treaty rights of other Powers, inasmuch as they involved a negation of the principle of equal opportunity. If it were not sought to interfere with the principle of equal opportunity—and, perhaps, even if it were—by the Most Favoured Nation Clause of the Treaties the other Powers would automatically acquire the rights that Japan sought exclusively for herself. The regions in question, were Japan's demands acceded to, would be thrown open to residence and exploitation by all nations having treaty relations with China. In a word the whole of South Manchuria and Inner Eastern Mongolia would be transformed into an "open port." The Japanese representatives denied the logic of these conclusions and intimated that they expected China to arrive at a speedy decision in regard to these particular demands.

The question of the extension of the term of the lease of Port Arthur and Dalny to 99 years came up for consideration at the conference on March 8. This was one of the least objectionable of Japan's demands for reasons which are set out in detail elsewhere. The original lease would, in the normal course, terminate in a few years, but it would be a practical impossibility for China to refund the money expended by Japan for improvements, and consequently no serious objection was raised to its extension.

At the next conference, held on March 7, China consented to extend the term of the lease of the South Manchuria Railway to 99 years. That this would be done was inevitable, and the only question that presented possibilities of disagreement was in relation to the repurchase of the railway by China. Discussion on this point was postponed but the repurchase clause was ultimately extended to the term of the lease.

When Japan compelled China to permit the transformation of the narrow gauge military line laid by the Japanese between Antung and Mukden during the Russo-Japanese War to the standard gauge, Japan was given a lease of the line until 1923. At the conference held on March 9 the Japanese representatives pressed the Chinese to extend the term of the lease of this line to 99 years as in the case of the South Manchuria Railway. In the circumstances there was no good ground for China refusing to agree to this demand, which was a natural corollary of those relating to the Leased Territory of Liaotung and the South Manchuria Railway. The extension of the term of the lease was therefore granted.

China had thus made very considerable concessions to Japan and had exhibited a spirit of reasonableness that won the commendation of all whose views were not perverted by prejudice. Japan had secured the continued enjoyment of the rights and privileges that she had gained as a result of her victory over Russia and was confirmed in her special economic condition in South Manchuria. But this was not nearly enough for Japan. China was compelled to agree that if any third Power offered to provide money for the construction of railways in South Manchuria or Inner Eastern Mongolia the consent of Japan must first be obtained. This restriction also applied to any foreign loan on the security of the local taxes of South Manchuria and Inner Eastern Mongolia. While the Chinese were averse to acceding to these demands, in view of the grave danger involved of complications with other Powers, they eventually gave way. The demand for exclusive mining rights was also discussed. The Chinese proposed that Japan should have the right for a term of one year to prospect the mineral areas of South Manchuria and should have the right to open fifty per cent of the mines so prospected. This was agreed to but the question was again opened by the Japanese.

Much to the surprise of the Chinese representatives, at the conference held on March 13, Mr. Hioki, the Japanese Minister, intimated that his Government was not satisfied with the arrangement about loans for railways or other purposes in South Manchuria and Inner Eastern Mongolia. At the previous conference it had been definitely decided that Japan was first to be consulted if a loan were to be sought for railway construction in South Manchuria or Inner Eastern Mongolia from a third Power, or if China proposed to raise a loan from any third Power on the security of the local taxes of these regions. Now the Japanese demanded that Japan alone should have the right to advance the money in the circumstances stated. Not unnaturally the Chinese objected to this. If, after an agreement were arrived at, the Japanese were calmly to repudiate it at a subsequent conference it was obvious that the Chinese would never know where they stood. The reopening of questions upon which a supposedly final determination had been arrived at could only delay the negotiations. The result of this delay would inevitably be that

China would be accused of "procrastination," whereas the blame should obviously rest on the Japanese. This aspect of the matter was discussed for several hours without a satisfactory conclusion being reached.

As an alternative to the demand that Japanese subjects should have the right of residence in the interior of South Manchuria and Inner Eastern Mongolia, the Chinese had suggested that they should open a large number of Treaty ports in order to facilitate trade and commerce. The Chinese recognised the great danger that would be involved in having numbers of Japanese pushing into every part of the interior who would not be amenable to Chinese law. If increased tradal facilities were all that Japan desired the opening of a number of treaty ports would meet their wishes without the danger being incurred of future complications. At the conference held on March 16 Mr. Hioki produced certain amendments to the demands in regard to South Manchuria and Inner Eastern Mongolia, which in some cases rendered them still harsher. For example in regard to the right of residence in the interior of these regions Japan now demanded that China should open twenty-seven treaty ports, which were specified, and *in addition* should grant the Japanese the right to reside and travel in the interior as originally demanded. Another amendment proposed by the Japanese was that all civil and criminal cases in which Japanese were concerned in these regions should be adjudicated upon by Japanese courts, and Japanese should have the right to lease land either temporarily or perpetually for purposes of manufacture or trade. In regard to farming it was demanded that in these regions Japanese subjects should have the right, both within and without the treaty ports, to carry on farming either by themselves or in co-operation with Chinese and should be allowed to lease land for these purposes. Another amendment demanded that thirteen mining areas should be delimited and the mines therein reserved for working by the Japanese. Mr. Hioki intimated that his Government insisted upon the acceptance of these amendments. He also announced that Japan agreed that if China wished a loan for the construction of railways in these regions, or desired to raise a loan for any purpose for which the security was to be the local taxes of these regions, Japan was first to be consulted. It will be remembered that after agreeing to this at one conference the Japanese demanded that they should have the exclusive right to provide loans in the circumstances defined. They have now receded to their original position. On their part the Chinese representatives agreed that if China decided to employ political, military, financial or police advisers or instructors in South Manchuria or Inner Eastern Mongolia, Japanese should have the preference.

Owing to Mr. Hioki meeting with an accident the conferences were not resumed until March 20 when Mr. Obata, the First Secretary of the Japanese Legation, acted for Mr. Hioki. The discussion of the demands in reference to South Manchuria and Inner Eastern Mongolia was resumed. It is to be remembered that the Chinese have throughout deprecated the association of South Manchuria with Inner Eastern Mongolia. While it is admitted that Japan as successor to Russia acquired certain rights in South Manchuria, it is denied that she has any defined position in regard to Inner Eastern Mongolia. Mr. Obata intimated that Japan rejected the proposal to open 17 "ports" in South Manchuria and urged the Chinese to grant Japanese subjects the right to reside and trade in these regions. The Chinese pointed out that there was a certain amount of ambiguity in Japan's attitude as the seventeen open ports (as well as ten in Eastern Mongolia which China would not consider) referred to were named by Mr. Hioki and not by the Chinese. Japan apparently wished to reject a proposal she had put forward herself.

When the question of Japanese subjects engaging in farming and acquiring land for that purpose came up, the Chinese representatives intimated that they were prepared to concede this demand if the Japanese were willing to forgo their extra-territorial rights and place themselves under Chinese jurisdiction. Mr Obata pointed out that no finality could be reached as long as the Chinese tried to exercise jurisdiction over Japanese in South Manchuria.

A willingness to meet the Japanese demands re inference to mining was shown. The Chinese said thatw hile they were prepared to agree to the delimitation of some of the thirteen mining areas named by Japan, they pointed out that certain others had already been assigned both to Chinese and to foreigners.

Discussion followed on the demand that China should hand over to Japan the control and administration of the Kirin-Changchun Railway for 99 years. The Chinese representatives said that they were willing to agree that the capital of the line should be entirely Japanese, the railway, however, remaining a Chinese Government line. In reply to this overture Mr. Obata said that if Japan were inclined to agree there must be a fundamental alteration of the agreement so that in a new agreement Japan should be given terms as favourable as any of those granted to any nation in connection with railways in any other part of China.

The next conference was fixed for March 23 and it was arranged that it should be held at the Japanese Legation.

Before concluding the record of the negotiations up to the time of writing it is well to point out that there have been movements of Japanese military forces that have excited apprehension in China and suspicion in other quarters. Some 30,000 troops, it is stated, have been despatched to China. The official Japanese explanation is that this merely represents the relief of garrisons, but the explanation is regarded with considerable doubt.

CHINA AND HER FRIENDS.

A study of the Treaties, Conventions, Agreements and other instruments obtaining between China and other nations will disclose the remarkable fact that she is regarded with the warmest sentiments of friendship by all the Treaty Powers. Thus Japan, "desirous of strengthening the friendly relations between China and Japan," amicably suggests that China should become a vassal state, hand over one of her railways without compensation of any kind, and slam the Door of Equal Opportunity in the face of all other Powers! This demonstration of pure and disinterested friendship is supported by military preparations.

It is time that China realized the fatuity of pretending friendship with nations that are obviously intent upon her despoilment in the first instance and destruction in the last, and began instead to discriminate. We do not intend to consider the subject in all its bearings in this article, but it may be of service to point out by what policy China's interests can best be served. The hypothesis that China can stand alone may be dismissed at once. She has neither the financial nor the military strength to resist oppression. Consequently it is imperative that she should gain the goodwill of those who possess what she lacks and whose past record inspires the hope that they will not set an impossible price upon their friendship. By a process of elimination, which need not be described in detail, the number of nations that might be expected to give China fair play were she to appeal to their sense of right and justice, is reduced to two—the United States of America and Great Britain. Of these two countries it may confidently be said that they harbour no designs upon China's territorial integrity nor upon her political independence. The assumption is justified that, broadly speaking, the present policy of America and Great Britain in regard to China is to preserve the territorial integrity of the Republic and to maintain the principle of equal opportunity for industry and commerce of all countries. Other nations have ostensibly committed themselves to a similar policy, but in regard to some their actions have belied their words, while others have but an academic interest in the future of the Republic and may be expected to regard with indifference acts of aggression calculated to render nugatory the diplomatic agreements to which they have set their hands. To America and Great Britain alone can China look with any hope of receiving succour in the hour of trial that is now upon her.

What form should such an appeal take? Obviously China has no prospect of forming an alliance with these countries. An alliance presupposes the rendering of reciprocal military services. But it should be possible for China to offer to America and

Great Britain special commercial advantages that would induce them to change passive goodwill into active friendship. Well-intentioned though these nations be towards China, it would be indulging a vain hope to expect them to interfere actively on China's behalf unless by so doing they secured some advantage for themselves as well as for China. Abstract altruism has as little existence in national as in individual affairs. In individual transactions both the honest man and the unscrupulous man are seeking the same goal, but by different roads. Still, obviously it is better to deal with the honest man, though he may keep his own advantage steadily in view. China is being asked by a Power that has gained for itself a reputation for rapacity and duplicity, to place herself under its tutelage. If the position be so desperate as to leave China only a choice between evils it would be better for her to throw herself unreservedly upon the protection of America and Great Britain. If China were to do this she would certainly be foregoing to some extent her rights as a sovereign Power. But surely it would be better to be under the protection of two nations whose good-faith is beyond suspicion and who might be expected to do their best to assist China to become self-reliant than under the protection of a Power that has never evinced anything but ill-will and hostility towards the Chinese nation. Some of the Japanese newspapers have occasionally lapsed into veracity and honesty and have emphasized with regret the fact that Japan is the one nation that has never manifested the faintest symptom of an altruistic desire for the progress of the Chinese people and the betterment of their condition. Yet this is the nation that asks the Chinese Government to estrange those whose friendship is not entirely self-seeking and to commit the future of the Republic to hands that are avowedly hostile! The people of China are justly proud of their ancient civilization, and it would be an almost intolerable shock to their pride to have to place themselves under alien wardship. Sympathy must be felt with the sentiment, but temporary shock to pride is better than permanent abasement. Beneath the protection of America and Great Britain, China would have a fair chance of carrying out the reforms upon which she has entered and of fitting herself for the position she should eventually fill in the sisterhood of nations. It should be possible, given full and implicit trust on both sides, to so arrange matters that China would receive the necessary protection from the two branches of the Anglo-Saxon people, without really jeopardizing her position as an independent state.

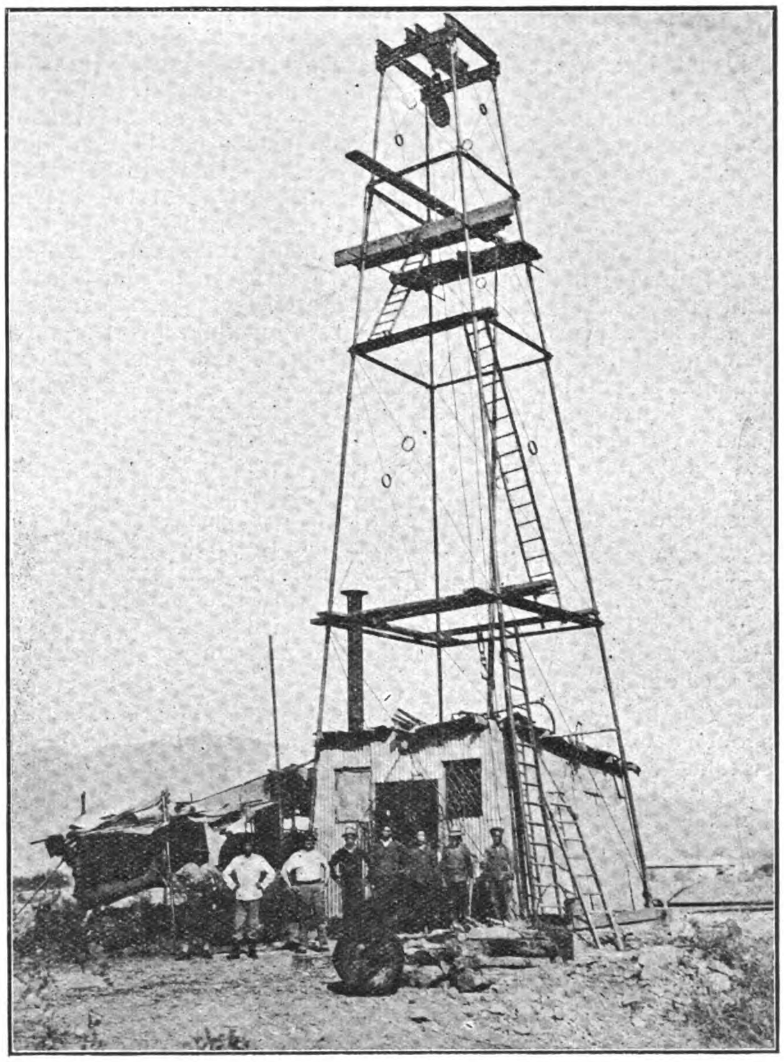
In the past, although the policy of Great Britain and America in regard to China has been more in accord than that of other countries, there have been minor differences. These have never really been serious and should be easily susceptible of adjustment. Their policy, in its main essentials, is identical. Both countries want to see China retain her territorial integrity and political independence. Both realize that a China well-governed and freed from the fear of aggression would afford an immense field for a mutually advantageous trade. Though they do not, as a fixed line of policy, seek for exclusive advantages for themselves they should recognize that it may be necessary temporarily to secure a special position in order to defeat the machinations of those whose ultimate ambition is to transform China into a closed preserve for one particular nation. Co-operation between America and Great Britain in their Far Eastern policy would not only serve to maintain China's independence, but would tend to draw closer the bonds that unite these two great countries.

CHINESE CABINET CHANGE

An important Cabinet change has been made in Peking which it is hoped will not affect the financial reorganization which was lately instituted. Mr Chow Tze-chi, who has made some excellent progress as Minister of Finance has been transferred as Minister of Commerce, Agriculture and Industry, and he has been replaced by Mr Chou Hsueh-hsi in the Finance Board. The latter was Finance Minister when the Reorganization Loan of £25,000,000 was signed with the Group Banks. He then held the post between July 26, 1912 and Sept 4, 1913. Mr Chow Tze-chi as Minister of Commerce will apply himself to organizing the Minstry in order more effectively to develop the industries of the country, a matter to which we will refer in a future edition.

DEVELOPMENT OF CHINA'S MINERAL RESOURCES

It is interesting to note that the Peking Syndicate, Limited, have recently formed a Development and Exploitation Department which should give an impetus to many mining enterprises in China whose progress has been seriously impeded through lack of the necessary plant and skilled labour. The Peking Syndicate possess complete Diamond Boring Plants operating under expert supervision and are now undertaking boring under contract. The necessity for boring before deciding on the site



Peking Syndicate Boring Plant at Mentakou.

for shafts need not be emphasized. The failure of efficiently working a coal field in China has in a large number of instances been due to the lack of knowledge on the part of the proprietors as to the exact nature of the field. The necessary data in this connection can only be obtained by putting down bore holes. Operations of this nature have been in progress for some time on the permit granted to the Tung Hsing Sino-Foreign Coal Mining Co., in the Western Hills at Mentakou, near Peking. This Company contemplates extensive developments and one bore hole which was put down to a depth of over 1,500 feet proved several seams of coal of a workable thickness. This work has been undertaken by the Peking Syndicate on a contract basis, and when completed the available data will be of immense value in working the field.

MINES OF SHANTUNG

GOLD DEPOSITS

As far back as 1868, Rev. A. Williamson contributed a very valuable report on the Minerals of Shantung. In referring to gold he said:—

When I first began to make inquiries regarding the minerals here, I was astonished at the universality of the knowledge of the existence of gold and the apathy regarding it. Every one seemed to know of it. A native literary friend said that "it was found in the sand of almost all the streams in the eastern portion of the province after heavy rain." Another well-educated man acquainted with the district reported the fact in nearly the same words, and the other day a man, a scholar from Hai-yang, said that it was found in the rivulets in his neighbourhood. But while it thus appears to be very widely distributed, there are several places which stand out pre-eminent. The first is Kieudien, 70 *li* S.E. from Lai-chow, lat. 37 deg. 12 min. N., long. 120 deg. E. and 95 *li* N.E. of Ping-tu. Marvellous stories relating to the richness of the quartz and the sand are current among the people, which of course have to be taken *cum grano salis*. I was told that a tea-cup full of the quartz, ground down, would sometimes yield two oz. of gold, and that 100 catties of the sand was worth about 1,000 cash; I was also informed that many years ago a man came from Shen-si with 300 followers, and in two months cleared 50,000 oz. after paying all expenses, and so on. Two or three years ago, a company of respectable men belonging to the neighbourhood made a proposal to the Chi-hien mandarin to work the mine, but he demanded 10,000 taels in hand before he would allow them to commence operations. They offered 3,000 taels, but did not venture a larger sum—more especially as they could not tell how much more might be demanded after they had commenced. The mandarin remained inexorable, and so the project was given up. I mention this to show why so few care to engage in the mining of the precious metals. The *jus metallorum* lies with the Emperor and Government, and they have no scruples in the matter of squeezing. The mandarins also say that they are afraid of disturbances among the workers of such mines.

Another place famed as a market for gold-dust is Ku-hien, about 18 miles W. by S. from Chefoo. It is procured in the streams which flow from the Lau-sze-shan. I have passed several old gold-washings on the banks of the river which flows past the town.

A third place is Kow-tew near Ning-hai, 60 *li* S.E. of Chefoo. In my last journey, having passed through a district 100 *li* to the S. W. of Chu-ching, long. 119 deg. 45 min. E., lat. 36 deg. 1 min. N., apparently full of minerals, and having arrived at the village of Kwun-sae and finished my work, I enquired of the inn-keeper—as my custom was—about the products of the district. He told me of a wonderful hill about 10 *li* south of where we were, which he affirmed was full of metals. It was called the hill of the "Seven precious things," and yielded gold, silver, copper, lead, tin, iron, and coal. He further said that it had been mined up to the close of the Ming dynasty, but was now forbidden. Deeming his story to be too good to be true, I sent out my assistant to enquire quietly about it, and he returned affirming that the matter was well known, and that two or three persons independently confirmed the inn-keeper's report. Though no one cares to engage in the regular operations of mining for the reasons already stated, yet any one is at perfect liberty to search the streams. Accordingly, every year a good many of the natives engage in this employment. They often find nuggets of varying size, which is a great temptation to persevere, in spite of failure. And yet last year I have been told that the gold-washers made on an average about one dollar per day in the district of Tsi-hya.

In a paper on the mineral Resources of Shantung read before the China Branch of the Royal Asiatic Society, in 1887, Mr. H. M. Becher, As. M. I. C. E., made the following references to the gold deposits of the Province:

Next in importance to Coal and Iron we may consider the Gold of Shantung, though, as in other parts of the world where this precious metal is found, its remunerative production remains a matter of speculative uncertainty—until established by demonstration. Gold was undoubtedly found, and as surely produced in this country, before the age of enlightenment of many other parts of the world, including that of the red man by his white prospecting brother on the famous Pacific slopes, but no rich finds of "pay-gravel," no "Eureka gulches" or "Cherokee flats" have followed the discovery on this side to enrich the Shantung digger and elevate him to the standard of the denizens of Sacramento Valley, though he has had a hundred times the number of years for its development and his own. Even if we allow that his forefathers have exhausted the placers, and left the later generations nothing but the bed rock to work on, surely some stronger argument than the inferior intelligence of John Chinaman must be necessary to account for the wealth of this richer California remaining unnoticed by him till to-day. With all due respect to the opinion of von Richthofen on the one side, and that of the optimist prophets of the coming golden age of wonders on the other, I venture to maintain a modest estimation of my own of this subject, though I hardly venture to predict from my short experience any absolute certainty of the results of pending trials. The source of the Gold, which still constitutes an item of regular production in small stream washings, is undoubtedly traceable to quartz veins in the gneissic country rocks of the well-defined auriferous regions. The question is, how far these original sources are in themselves suitable for exploitation. That rich outcrops of free milling Gold rock are not abundant is evident from the fact that only very few traces of workings on such are to be found amongst a people who are by no means ignorant or slow to profit by the occurrence of the precious metal when it pays them to get it. The other alternative remains that quartz containing too small a percentage for extraction by any but the most skilful treatment may exist in quantities, though it has proved valueless to the natives, who never learnt any but the rudest methods of dealing with it. From actual examination and practical test I am convinced that the greater number of quartz veins are but small and of low grade. The larger veins are often almost barren, whilst the richest streaks are generally far too minute and irregular to be profitably followed through the rock. I am sorry I have no statistics on the actual annual production of Gold from native washings, whilst the out-turn of the only Gold mine and mill established is yet too uncertain a problem for conclusions. Such as they are, the auriferous rocks are widely distributed over the eastern end of the peninsula. Three places are, however, especially reputed as centres, viz., Ning-hai, Chi-hia, and Ping-tu, whilst other small districts collect little parcels of Gold-dust to supply the travelling buyers who make periodical visits in its quest from Chefoo and other markets. It is hoped by the present adventurers to find and work mines in all these districts; but up to the present, Ping-tu only has afforded a lode worth the re-opening of ancient workings, no second lode of sufficient size and richness having been discovered elsewhere. Even in the Ping-tu districts many other promising-looking outcrops, on which systematic explorations were commenced, had to be abandoned as worthless. I have prepared an abstract of 99 assays of auriferous samples from which the average of the Ping-tu mine quartz proves to be from one to two ounces of Gold per ton, whilst that of other quartz veins seldom averages more than half an ounce. A further unfortunate characteristic of these ores is the prevalence of Pyrites and consequent combination of the precious metal, which is thus not all what is known as "free" for extraction.

The only other metalliferous ore actually found and said to have been produced in Eastern Shantung is Galena, Lead ore

containing Silver, the latter (sycee) metal of course forming the attraction, and dignifying its reputed localities with the posthumous fame of Silver mines. Most of the occurrences are too insignificant to map, and it is hardly probable that any will afford material for mining, but in the west larger deposits are reported at Chi-chuan, on which it is proposed to commence extensive smelting operations, although the resources of the mines themselves have not been established. Several samples from Chi-chuan, Kü-cho and other spots showed most of this Galena not to be very rich in Silver, generally from 20 to 30 ounces per ton. Besides these no actual ores of Silver have been found to my knowledge.

Copper ores are still more conspicuous by their absence in anything like abundance. I have seen no Copper lodes, but only a few specimens from the I-shui district.

Quicksilver and Tin, though figuring on FAUVEL's and HOWARD's maps, appear to be only of legendary existence, which is to be regretted, as mines of these ores would be of great value to the Chinese, who use both metals largely.

Jade and precious stones complete the category of Shantung's reputed mineral resources. Of the former I have only seen the mock variety used for common stone ornaments, whilst common, valueless Garnets are the only representatives of the latter, much to the loss in intrinsic value of my collection.

Having disposed of Mr. HOWARD's "Principal Minera Productions," I have, in conclusion, to mention a few less sensationally attractive minerals, not figuring on the map, but which really do contribute to the resources of the country; and I must also briefly refer again to one and the only class of metalliferous outcrops in which I discovered a fertile and interesting object for mining exploration.

The possible existence of a certain class of valuable metalliferous deposits, as indicated by numerous strong ferruginous outcrops, deserves some special attention; such outcrops are found only in the limestone rocks which VON RICHTHOFEN classes as uppermost members of the archaic metamorphic schist series, though numerous insignificant traces of similar Iron oxides occur in the gneiss beds. The most characteristic occurrence is at a place called Chin-kuo-san, one of a low hill range along the coast between Chefoo and I-chow-fu (VON RICHTHOFEN: Kin-sün-san), where the abundance of limestone fragments strewing the surface of the low hills, especially on the south-western slope, is remarkable. These can easily be traced to solid masses in the rock of more or less size and regularity, the largest being on the crest of the hill, where a temple is perched, marked as "Pagoda Hill" on the charts, and conformable to the strike of the limestone, its course can be followed east and west along the ridge and on neighbouring hills of the low range. The mineral, Limonite, is hydrous oxide of Iron, more or less mixed with carbonates of Iron and lime, oxide of maganese, and some quartz, and on closer examination parts of it are found to be of pseudomorphous crystalline structure, the shape of the crystals being modified cubes peculiar to pyrites. This peculiarity indicates the origin of these outcrops to be in the decomposition of bodies of sulphuret minerals, chiefly Iron pyrites, and gives a degree of probability to the supposition, based on native report, that Galena is to be found at Chin-kuo-san. These outcrops are therefore to be regarded as favourable sites on which to commence future explorations for mineral deposits which may be found in depth to carry Lead, Silver, or Copper ores. It is worthy of note that similar though much larger ferruginous outcrops, between limestone and quartzite, cap bodies of these sulphurets in the Chi-chow district, province of Anhwei, where limited prospecting operations have opened up quite a promising ore body.

A mineral product which really is mined and produced in considerable quantities, especially at Lai-chow-fu, is Steatite or Soapstone, found here in more or less purity and largely prepared for local use and exportation in the form of *shih-fĕn-dse*. This, a fine, white, non-plastic, pipeclay-like substance, is, I believe, mostly used for washing and bleaching purposes. Varieties of the Steatite rock are also mined as an ornamental product, the beautifully marked *hwa-shih*, some of which is cut into slabs and carved in various forms, which have procured for the mineral the name of "Pagodite" in Europe. Similar minerals are also found in other parts of China and in Corea.

Quartz crystals form another source of desultory mining amongst the villagers in some of the higher ranges of granitic hills, particularly near Ping-tu and Chi-mi. The pure, unfissured mineral is used for the manufacture of spectacle lenses, which, when of a uniform, light, smoky-grey colour, are highly valued by the Chinese. Beautiful specimens of the black crystals are found and sold as ornaments, and Dr. WILLIAMSON mentions some of the peculiar violet hue, which constitutes the amethyst.

Asbestos occurs more or less frequently in the crystalline calcareous rocks, not, however, in sufficiently fibrous form to be of commercial value.

It is not at all improbable that when the days of geological surveys dawn on China, other valuable minerals will be discovered in Shantung, such as natural phosphatic fertilisers, or the ores of Sodium and Aluminium—that metal of the future. The necessary ingredients for glass are now found and utilised in its manufacture at Po-shan, and I have little doubt that some of the limestones would afford hydraulic cement. When, therefore, the Coalfields of the west are allowed to expand their resources, to supply the blessing of cheap fuel throughout the province, and the industries consuming the power to be generated by abundant Coal, come into life with the march of progressive culture, the true mineral resources of Shantung, other than those on which a partly fictitious reputation has depended, will be recognised and appreciated.

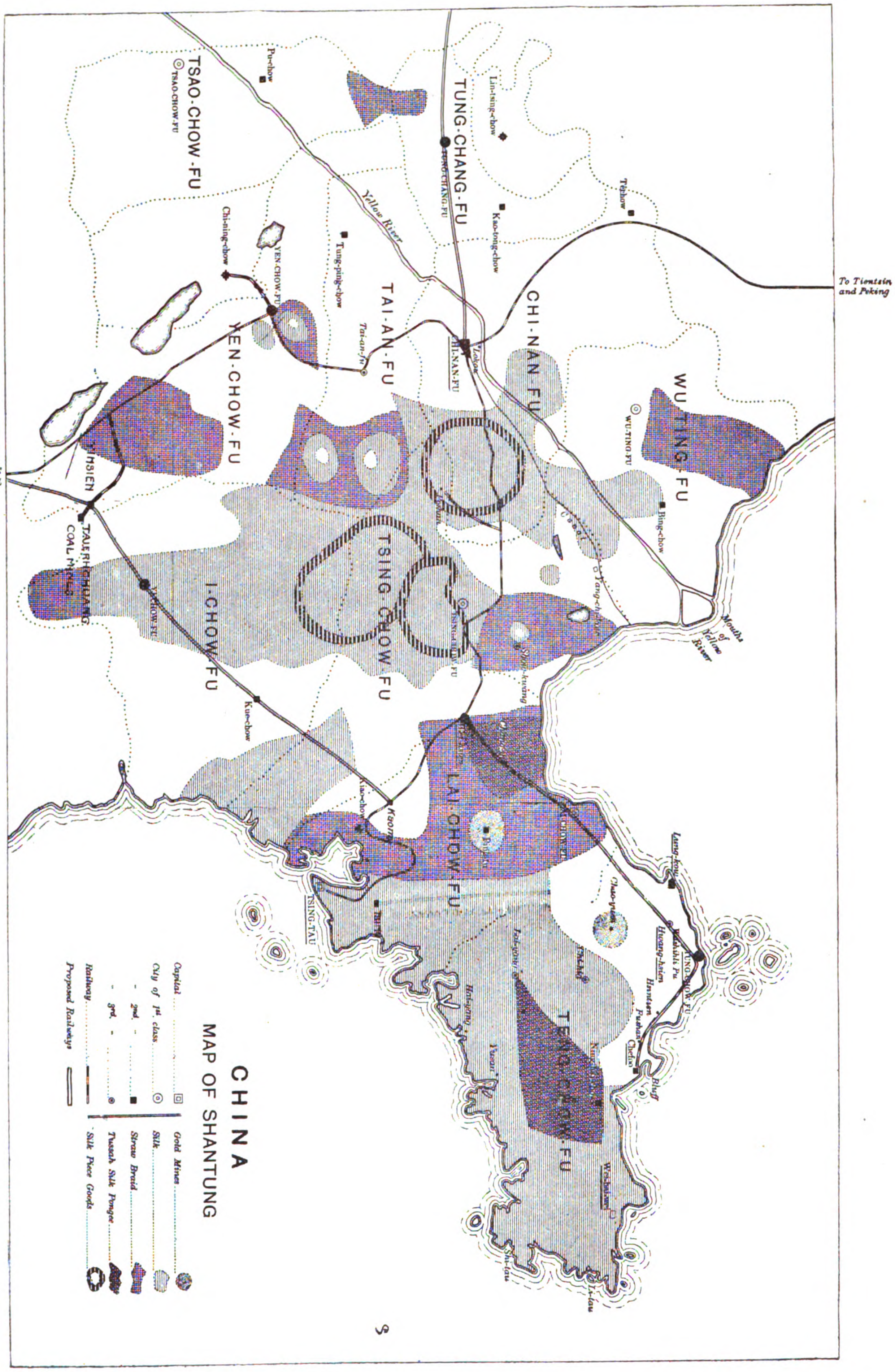
The Weihaiwei Gold Mines:—The presence of Gold in the Weihaiwei district led to the formation of a strong foreign company about ten years ago, to work the deposits. After the expenditure of large sums for plant and machinery, the workings were ultimately abandoned, and the affairs of the Company wound up in 1906.

Four years later other gold mines were discovered in Hu-Lang Shan and Hsien Shan within jurisdiction of the Chinese. It is alleged by the Chinese the British authorities in Wei-hai-wei demanded that these mountains should be included in the territory of Wei-hai-wei, as they wished to develop them with British capital. This demand was refused by the Chinese authorities, and many foreigners made overtures to obtain the concession for working these two gold mines. The Governor of Shantung persuaded the Peking Government to take steps to work these mines by the aid of Chinese capital, and the Board of Agriculture, Industry and Commerce sent a deputy to the mines to survey them with a view to raising the necessary funds to develop them.

Nothing, however, came of this reported activity, as the mines were never developed.

GOLD MINES IN SHANTUNG.

Chou-Yuen Mine:—The best-known mine in China is that of Chou-Yuen, about 40 miles SW. of Chefoo, where a quartz vein from 40 to 90 ft. wide has been uncovered for more than a mile in length. Curle reports that 200,000 tons of ore, worth $10 per ton, has been developed. The ore is about 40 per cent. free milling, and many years ago a chlorination-plant was in operation upon the tailings from the stamps. The mine has been closed for many years by government order; but there has been constant effort on the part of foreign companies to secure the concession, and recently the Governor of Shantung petitioned the Peking government to allow the Chinese owners to operate the mine, fearing lest it might otherwise be lost. The near-by mines at Ping-tu are probably of considerable value. In spite of the government prohibition of mining a certain amount of work is carried on quietly, and Hoover estimated the gold production of Shantung at $12,000 annually. With the few exceptions noted there seems little probability that deposits of sufficient size can be developed to justify the construction of modern milling-plants, the cost of labour being so low that primitive methods give cheaper working-costs. The tailings from the chlorination plant, mentioned above, were bought by


CHINA
MAP OF SHANTUNG
Capital
City of 1st class
" 2nd "
" 3rd "
Railway
Proposed Railways
Gold Mines
Silk
Straw Braid
Tussah Silk Pongee
Silk Piece Goods
TSAO-CHOW-FU
TUNG-CHANG-FU
TAI-AN-FU
CHI-NAN-FU
WU-TING-FU
YEN-CHOW-FU
I-CHOW-FU
TSING-CHOW-FU
LAI-CHOW-FU
TENG-CHOW-FU
TSING-TAU
Yellow River
Mouths of Yellow River
To Tientsin and Peking
To Nanking and Shanghai

the neighbouring farmers, who carried the material home, and, in the dull agricultural season, ground it in native mills and panned it. The deposits near Wei-hai-wei have been described by Verschovle, but are of little importance.

The Pingtu Gold Mines:—The Pingtu gold mines in Shantung have long been known for the richness of the deposits and were some years ago worked by a Chinese Company with modern machinery and under modern methods.

The machinery imported for the working of these mines was on the principle of extraction through quicksilver, the gold being found in a pure state in the quartz. In course of time, the quantity gained becoming less, the cost of extraction became proportionately heavier, eventually necessitating the suspension of work. Subsequently, gold was found in combination with sulphur, known as gold pyrites; but the Chinese, finding that the machinery they had was useless for gaining the gold when found in this combination, were unwilling to go to the expense of buying new machinery, and the mines were closed after an unsuccessful attempt had been made to export the pyrites for treatment in Europe. It is, therefore, by no means proved that the Pingtu mines would not be profitable if properly and honestly worked. As a matter of fact, some 3,000 ounces of gold sand reaches Wei-hsien annually from this quarter, is there melted down, and thence sent *via* Tsingtau to Shanghai for sale.

British and German mining experts have investigated the property and stand willing to develop the mines with foreign capital, but true to tradition the Chinese refuse to entertain any reasonable proposal.

Tengchou Gold Mines:—Three years ago Chinese papers reported the discovery by natives of Têngchou prefecture, Shantung province, that the hill district of Wêntênghsien, of which Langhushan is the highest point, is rich in gold quartz. A number of Shantung officials in Peking obtained the necessary permission from the Shangpu to develop the Langhushan, or Wolf and Tiger mountain gold deposits, the funds needed for the purchase of crushing and other machinery to be advanced by the Provincial Government of Shantung.

Apparently this tax on the Provincial revenues for the benefit of a few patriotic officials was never levied, as the deposits are still awaiting the crushing and other machinery.

The T'ung-Tsing Gold Mine:—Reports are received from time to time of the gold mining at T'ung-tsing. The operations seem to be carried on in a more or less wasteful way, under the crude Chinese methods, a Wei-yuen being in charge who it is said claims a large percentage of all that is found. Chinese with a lust for gold come from near and far to share in the treasure, and some of them, fairly astute business men, have put in capital and lost heavily, the loss being partly due to failure to find treasure and partly due to fraud. Some fine refined gold specimens have been seen from this mine, in pieces of about one Chinese ounce in weight.

The Maoshan Gold Mines:—Among other concessions obtained by Germany from China was the right to work certain gold deposits in the province. There were five distinct rights conferred, and the Agreement stipulated that the Germans should have the mines developed and in operation before August 29, 1909. One of the most promising of these mines was located in the Maoshan mountains in the district of Minghaichow about 30 miles to the northeast of Chefoo. A stamp mill and plant was duly erected, but the results were far from being profitable. The losses incurred induced the Germans to approach the Chinese authorities to redeem the mine at an adequate price, which was named at $476,000 Gold. The negotiations led to considerable friction, but the mine was eventually taken over by the Chinese authorities. The Germans had failed to live up to the stipulations of the Agreements and the Concessions were cancelled.

Shao-an Shan Gold Mine:—During the last regime the gold mine of Shao-an Shan in the prefecture of Chihchow, Shantung, was operated exclusively under official control and as usual was a losing proposition. In December, 1912, Mr. Liu Shen-chow, one of the gentry of Chihchow, petitioned the Government for permission to work the mine with his own resources.

The German Chinling Gold Mine:—According to Japanese reports a German carried out some prospecting during the last year at a place known as Chinling in Shantung. The result of his investigations indicated the presence of gold in paying quantities.

As he was unable to obtain a concession he endeavored to arrive at an understanding with the Chinese Government through the assistance of the German Minister in Peking who negotiated with the Chinese Minister for Foreign Affairs. It was then agreed that work under joint German-Chinese direction could be carried on.

The Chinese government is reported to have despatched Chang Ching-fu to Shantung to enter into arrangements with the German interested.

THE DIAMOND FIELD OF ICHOU

When the German experts were sent over the country to locate the must valuable fields, among the propositions taken up was a thorough prospecting, covering several years, of the diamond field near Ichoufu. It has been known for a long time that diamonds existed in southern Shantung, and a quantity of stones are continually being offered by natives in that locality. The Ichoufu diamond is, as a rule, not clear enough to be of much value for gems, but for all purposes where diamonds are used for industrial purposes, such as on marble saws and glass cutters, these stones answer very well. The district in which they are found evidently covers a large area, but in no case did the Germans manage to discover the stones in paying quantities. A good deal of surface work was carried on, but everything was finally abandoned. At that time the German foreman thought he had found the right place to work, but it was many miles north of the original diggings and seemingly not covered by the company's concession, and as no arrangements could be made with the native officials the matter was dropped.

At present the output of the district is regularly bought by Tsingtau dealers, but as the natives do not carry on regular mining operations, finding the stones they have apparently by chance on the surface, it seems doubtful if foreigners will again try to locate the field, as they have nothing to guide them in their efforts. The Chinese, on the other hand, will not tell where they receive their supply, always answering any inquiry by stating that the farmers wear straw shoes when plowing; these shoes they afterwards burn and occasionally find raw diamonds, which have stuck in the straw, in the ashes.

The diamond district lies fifty li southeast of Yichowfu, on the narrow strip of territory between the Yiho and Shai Rivers. It is the opinion of the German experts that the stones were deposited in their present position by the action of the water when there was a connection between the two rivers. It is supposed that the source of supply is somewhere in the Mengshan mountains, 50 miles to the northwest of Yichowfu. Diamonds, some of them of good quality, are being constantly picked up in the district referred to.

Mica Deposits:—Another mineral property which the Germans have looked into, but not attempted to work as yet, is a deposit of mica. This mica is reported to be rather cloudy, and not as clear as might be desired, but the flakes obtainable are of unusually large size and do very well for stove windows and similar uses. This mica supply is said to be very large, and would be a paying proposition if it were not so far removed from all means of transportation.

From Shanghai, which is the sole market for green teas in China, 33,828,550lb. of green tea were exported during the year 1913; 12,742,907lb. went to the United States and Canada, 523,320lb. to the United Kingdom, 9,316,014lb. to the Continent of Europe, 1,786,925lb. to Bombay, 7,994,085lb to Batum, and 1,465,299lb. to the North African ports. All these figures, except those for Bombay, show marked decreases on the previous seasons.

THE CHUNG HSING COAL RAILWAY

Known as the Tai-tsao Railway, this line, something over 80 li in length, runs from the coal mines 20 li north of Yihsien down past that city to Taierchwang, the leading port of South Shantung on the Grand Canal.

TSAO-CHWANG.—Is an ordinary Chinese village of a couple of hundred families remarkable for nothing else than that it gives its name to the mines in the near vicinity. The town of note in the vicinity is Ch'i-tsun. This is a place of some 800 or 900 families, famous in all the region round about for its potteries. The great Kang water jars, used also for holding grain, some of them considerably larger than a flour barrel, are made here, while bowls and small jars are made by myriads. There are 13 kilns and each one of them can turn out between $600 and $700 Mex. worth of products per month. Nearly all, if indeed not all, the kilns are controlled by one very wealthy family of which one of the members is a Hanlin and a former Censor, Tsui by name. This town shares with Yen Hsien, in Central Shantung, the pottery trade of this section.

YIHSIEN.—Is a trim little city attractively located at the opening of a valley. It was formerly spelled Ihsien and so appears in the Bond advertisement of the Tientsin-Pukow railway where it is mentioned as the point where the German section of the railway connects with the British section. The Post Office has changed the spelling to avoid confusing the place with an Ihsien in Anhwei. The city is prosperous but is not higher than a third rate district city as regards size and trade.

TAIERCHWANG.—This is a place of about 600 families. It has a brick wall surrounding it and one very fair business street. It almost supports a telegraph office and has also a Post Office with daily mail from the South. Here is an office for the collection of revenue from boats, and another office established by the Board of Commerce, Industry and Agriculture to see that the other office does not unduly oppress the boatmen and traders. The following are some of the principal distances from Taierchwang:

S. E.	via	Canal	to	Yaowan	110 li
"	"	"	"	Hsu Chien	180 "
"	"	"	"	Tsingkiangpu	360 "
"	"	"	"	Chinkiang	720 "
N. W.	"	"	"	Hawchwang	83 "
"	"	"	"	Hsia Chen	140 "
"	"	"	"	Tsiningchou	360 "
N. E.	"	land	"	Ichowfu	180 "
S. W.	"	land	"	Hsuchowfu	110 "

THE MINES.—It is plain from the above table that the outlook for the mines is very favourable. Tsining is the second largest city of Shantung, somewhat decadent now owing to the diversion of the grain transit from the canal to the ocean but still a very large and by no means dead place. Ichowfu and Hsu Chowfu are flourishing cities of 60,000 or 80,000 population and centres of populous regions. Su Chien is a prosperous district city situated on the old bed of the Yellow River from which it draws sand for its glass-works. These are under the care of several Englishmen and use large quantities of coke. The road from the mines to Taierchwang is traversed by one continuous stream of barrows wheeling coke. I counted 50 in a couple of hours. Each barrow holds 600 catties and upward and the poor fellows receive about 500 small cash per day for their toil. Most of this coke, it is said, goes to the glass-works. Tsingkiangpu is one of the big towns of north Kiangsu.

THE OUTPUT.—At the mines is at present two thousand tons a day. The coal is only from two to three hundred feet deep and in places the seam is over 20 ft. thick. The coal is of excellent quality, bearing the reputation of being the most valuable deposit in the province.

The coal is quite soft and is remarkable because of its freedom from lumps. About a hundred coke ovens are in close proximity to the mines.

The premises are quite extensive, probably three li long and two li wide. The concession granted by the Imperial Government to the company embraces a territory ten li square. The leading spirit of the company is Hon. Chang Lien-fen, formerly Salt Commissioner of Shantung. So far as now known coal is found within a region 70 li long by 40 li wide. Another company headed by a rich Chinese of the vicinity, Mr. Liang, has another, but much less valuable, concession near by. There is a great future for the mines as the railway will make such large use of their coal, no other mines beingc so onveniently within reach of it.

It is almost a certainty that in the near future a railway will be built connecting the mines with the recently opened port of Haichow, in north-east Kiangsu. This will give the mines an outlet to the ocean. The real port is Ching Kou, not Haichow. The line will be easy of construction, running a hundred miles through the fertile and populous Ichow-fu plain and touching that city.

THE TAI-TSAO RAILWAY.—The 27 mile coal road is now in operation. There is one 60 metre bridge crossing a small river at Yihsien. There are only three other bridges and all together do not exceed 70 metres in length. The grade is extremely easy, there are only two cuts and these very light ones on the entire line. In addition to the two termini and Yihsien, there is but one other station, that at Ni-kou, a scattered village of some three hundred families half-way between Yihsien and Taierchwang. The materials, that is bridges, rolling stock, rails, etc., were supplied through the firms of Arnhold, Karberg and Co., and Carlowitz and Co. It is said that the Chinese concessionaire had to make a stiff fight at Peking to keep his prize from following the path of so much other mineral wealth of Shantung in passing under German control and the matter was compromised by the arrangement that in the development of the mines German machinery should be used. It is generally supposed that there is also some German capital invested therein.

The railway however is overwhelmingly capitalized by the Chinese, nearly all Shantung high officials being interested therein, Szechwan and Chekiang also being largely represented as well as capitalists in Shanghai and Tientsin.

The Railway is almost entirely a coal road. Eight cars and three locomotives were built for this traffic, machine shops were erected at Taierchwang. Limestone is abundant in the nearby hills.

The coal yard and wharf at Taierchwang is a large affair. About 45 English acres were purchased in a bend of the Grand Canal which bounds it thus on two sides. Along these two sides 700 ft. of wharfage stone masonry were constructed while on the two remaining sides a circumvallating moat was constructed which admits boats from the Canal. The whole plot has been elevated 5 ft. above the adjacent territory.

THE CANAL.—Is sadly in need of dredging. Only boats drawing half a foot can navigate certain sections of the upper part of the route from Chinkiang to Tsining.

SHANTUNG MULES

There are raised in the southern section of the Province of Shantung mules which compare favorably with those raised in the Western States of America. Splendid mules from Shensi Province also find their way into this Province where representatives of the British and German Armies, make considerable purchases for shipment through the port of Tsingtau and over the railroad to the port of Pukow on the Yangtze River. Mules standing 14 and 15 hands high, weighing 1,200 to 1,300 pounds, and from 8 to 10 years of age, can be bought at 160 to 200 taels ($120 to $150 U. S. currency). A man at Tsinanfu, Shantung, informs the American consulate at Chefoo that he can purchase 200 to 300 animals at these prices and arrange for shipping them to the port of Tsingtau, where they may be loaded aboard steamers for shipment abroad. Tsingtau is 250 miles distant by rail from Pukow.

Smaller mules adaptable for use in mountain work can be obtained at lower prices. Southern Shantung and northern Kiangsu are noted as good breeding places for donkeys, where they are sold in lots of 100 to 200 at about $10 U. S. currency a head.

ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

RAILWAYS

Tsingtao-Tsinan Railway.—From November 15th, on which date the Tsingtao-Tsinan Railway was thrown open to public traffic, till January 22nd last, the earnings of the Line were: Passenger receipts, Silver Yen 119,808; Goods receipts, 177,343; Platform tickets, 116,70; Baggage charges, 1,259.70; Miscellaneous 2; a total of Silver Yen 298,529.40. The goods traffic was begun on December 15th, while platform tickets were made issuable on January 2nd for any one wishing to enter the railway platforms as in vogue in Japan.

On February 11 the distance between Fangtzu and Changtien was made one section and fare was charged accordingly. The passenger rates are to be reorganized on the old German footing, and soon will replace the existing sectional system. Shippers report that the new railway freight tariff is even lower than the former German rates.

According to the inventory prepared by the Railway Regiment in February, the rolling stock now on the Line consists of about 1,000 goods and passenger cars and about 50 locomotives. None of the locomotives has yet undergone overhauling since coming into Japanese possession.

The repairing of railway bridges, embankments, etc., damaged by the Germans and by the floods is awaiting plans and estimates to be drawn by Maj. Yamanouchi, of the Provisional Railway Regiment and Mr. K. Nakamura, the engineer lent by the S. M. R. Co., and effort to complete the repairs before the rainy season sets in will be made. The appropriation for the repairs has not yet been fixed definitely, but probably will be about Y600,000.

Kiukiang-Nanchang Railway.—The Nan Hsun Railway (Nanchang and Kiukiang) is now open from Tukiapu to within 3 or 4 li of Nanchang and is proving a great boon to Nanchang and Kiukiang replacing the steam launch system which was very uncertain. It takes about 8 hours to make the through journey by rail. A large bridge over the river at Tukiapu, in course of construction, will take a year or more to complete.

Kuangsi-Szechuan-Yunnan-Kueichow Railway.—With reference to the construction of the Kuangsi-Szechuan-Yunnan-Kueichow Railway, new steps have been taken to raise funds for its construction. The Government found that the projected line was over 1,400 miles long and that it would hardly be possible for the Central Government to raise funds for its construction within ten years. With the war raging in Europe, foreign loans are impossible and the Ministries of Communications and Interior have decided to follow the precedent of the Canton-Hankow Railway. The Authorities of the provinces concerned will be requested to raise funds from private sources to start construction work on the proposed railway.

Sin-Chuen Railway.—A group of Canton merchants have organized with Mr. Chan Lim-tin as President to build a railroad from Chun Shan to Sin Chuen. It is to be known as the Sin Chuen Railway and will connect with the Canton-Kowloon Railway at Chun Shan. Official recognition has already been secured and plans drawn up. Arrangements have been made to purchase the right of way.

Aigun-Tsitsihar Railway.—The projected railway from Aigun to Tsitsihar covers a distance of 1,100 Chinese *li*, and the cost of its construction has been estimated at $20,000,000. At first, the Government intended to raise a foreign loan for its construction, but for some reason or other, the matter has been shelved. Recently, the Governor of Heilungkiang submitted a request to the Government to the effect that as the projected line between Aigun and Tsitsihar would form an important factor in the development of that province, its construction admitted of no delay or hesitation, and that he can now raise $9,000,000 from his province while Fengtien and Kirin will undertake to raise the balance of $11,000,000. The Governor further requested the Government to permit him to issue bonds upon the proposed railway in order to raise funds to the prescribed amount, in case Fengtien and Kirin fail to contribute. The Government, in reply to the Governor's suggestion, permitted him to carry out his scheme.

The Pekin-Hankow Railway.—The Director of the Kin-Han Railway, with a view to extending the traffic of the line is about to raise a loan of one and half million dollars to double-track the line at certain points, the recent increase of traffic necessitating such a step. The loan has been sanctioned by the Ministry of Communications and will be called the "Kin-Han Traffic Development Loan," for which five classes of bonds varying from ten to ten thousand dollars will be issued. The loan will carry a monthly interest of 0.7 per cent. and will be redeemed within a period of two years. Instalments of funds will be drawn from the surplus funds of the Kin-Han Railway receipts and deposited in the Bank of Communications to repay the loan.

Chinchow-Taonanfu Railway.—Mr. Kuo-shulin, a Chinese engineer, has completed the surveying of the proposed route for the Chinchow-Taonanfu line. He brought the map of the route prepared by him to Mukden recently. He is to go over the proposed route in company with Mr. Chang Yu-tien, president, and Mr. Yang Chan-hsin, vice-president, both of whom are at Mukden. Work will be begun in April. The Chinchow-Fuhsin section will be taken up first and the entire line is expected to be complete by late autumn.

Kirin-Changchun Railway.—The traffic returns of the Kirin-Changchun Railway for January were:—Passenger receipts, Silver Yen 42,807; Goods, 69,152; Miscellaneous 135 a total of Silver Yen, 112,097 which was a gain on the figures for the corresponding month of the previous year by S. Y3,479 chiefly due to livelier movements of produce.

Congestion at Vladivostok.—Upwards of 80,000 tons of produce are awaiting shipment at Vladivostok. The Siberian and North Manchurian Railway have set apart a good portion of their carrying capacities for the transportation of military stores and it is feared that these two causes will seriously impede, if not absolutely block, traffic from North Manchuria to Vladivostok for the time being at least. The Russian Railway authorities have reserved the warehouses at Vladivostok for Siberian wheat for export to France. Beans are stored in the open. The brisk arrival of beans by railway already has taxed the capacity of the wharves, and the authorities may be obliged to decline further transportation of beans to the Siberian port for the present. Several new wharves of a temporary character have been constructed hurriedly for the exclusive loading and discharging of military stores. A dozen American steamers were in port recently, and about fifteen more were expected. All were to ship Siberian wheat for France as return cargoes.

South Manchuria Railway.—Traffic returns of the South Manchuria Railway during the first half of the current fiscal year showed a falling off of Y2,130,000, and serious deficits were feared as the latter half of the preceding working year had brought record returns. A marked improvement set in early in December and continued throughout January. During that month traffic receipts reached Y2,136,092, an increase of Y1,045,988 over the corresponding month of the previous year. At the end of January the deficit in traffic receipts, was reduced to Y477,586. Returns for the last 8 days of February show a daily average of Y93,562, as against Y81,199 for the preceding decade, and an increase by Y12,196 over the figures for the corresponding period of last year. This makes the increase in the traffic receipts from December, 1914, to February, 1915 over the corresponding term of the previous season, Y1,727,466.

Although nothing definite has been given out by officials regarding the amount of capital expenditures which the South Manchuria Railway Company proposes to invest during the next fiscal year, the total is estimated to be in the neighbourhood of Y6,000,000, as against Y12,300,000 for current fiscal year.

The estimates for railway construction, improvements, etc., have been cut down to about Y900,000. The construction of a new engine-shed at Dairen, the double tracking of the Suchiatun-Mukden Section, and other projects have been shelved temporarily. The harbour improvements will be confined to the continuation of the works now in progress, such as the new third quay, the Northwest Breakwater, the shores at Jijiko, Hamacho, etc. These will cost about Y900,000. The Land Department estimates have been reduced to a little over Y600,000 for prosecuting the incomplete work in the construction of waterworks, sewerage plant, roads, extensions of residential quarters for the Company's officials, etc. Further installations for the Agricultural Experimental Station, and all other new enterprises have been deferred. The Wharf Office estimates have been curtailed to about Y600,000, and the construction of a steel-girdered warehouse on Main Quay, postponed after the foundation were laid appears to have been put further off.

Will Tax Passengers.—The President of the Japanese Railway Board has announced that a war tax of 25 per cent. of the fares will be levied on behalf of Russia at every station in Japan country on all passengers, luggages and cargo using the Russo-Japanese connection service.

Urga Kalgan Auto Service Starts—It is reported from Kalgan, that Mr. Prokin, a Russian, has started an automobile service between Urga and Kalgan and that the first car will run in February. The trip will be made in about four days.

To Bridge the Yangtse.—The *China Times* credits the Peking-Hankow Railway with contemplating the construction a railway bridge

at Hankow over the Yangtsze River. The site has been surveyed and the work and the cost have been estimated. It will be 3,750 feet long and 30 feet wide, and the largest span will be over 300 feet wide so that river craft will be able to pass. A double track railway will be laid.

Railwaymen to Meet.—The second Railway Union Convention between China and Japan will take place in Peking sometime in April. The Ministry of Communications has appointed 16 officials to make preparations for the coming Convention. The delegates in the coming Convention will consist of officials specially appointed by the Governments of both countries, the representatives of the various railways in both countries and the representatives of the leading steamship companies in Southern China.

Siamese Railway Receipts.—The Broad gauge or Northern line's receipts for January 1915 and January 1914 are as follows:—

	Year 2457	Year 2456
Passengers	258,500.	185,656.
Goods	180,800.	156,691.
Others	6,300.	6,621.
Total	445,600.	348,968.

The totals from April to January for last year was Tcs. 3,404,873 as against 3,199,332 in 1914.

China's Foreign Employes.—Many foreigners are employed by the Chinese Government in the Customs, railways, post-offices or other branches. According to the latest information the total is 3,948 persons, whose nationalities are:—British, 1,105; French, 1,003; German, 533; Russian, 463; American, 174; Japanese, 207; Italian 75; Austrian, 59; Belgian, 171; Others, 158, a total of 3,948.

New Shimbashi Station.—The Japanese railway authorities concerned have decided, it is reported, to rebuild the Shiotome Station or former Shimbashi Station at a cost of one million yen. According to Mr. Nishikawa, who is in charge of rebuilding, the present railway factories around the station are all to be removed to Oi-mura, and warehouses are to be built in place of the factories. The Shiotome bridge just behind the station is to be removed and a big wharf is to be built there so that about two hundred and fifty Sumida river boats can dock. The present station buildings will be replaced with a bigger new building, although some officials in the Railway Board desire to have a part of the present buildings retained as a souvenir of the famous old station. The construction work is expected to be begun after the next extraordinary session of the Imperial Diet. It is to be completed in one year and a half.

Siamese Bridge Tenders.—The Acting British Consul-General at Bangkok reports that tenders are invited by the Siamese Royal Railway Department, Broad Gauge for the supply of a steel bridge consisting of five 40-metre spans Sealed tenders, marked "Tenders for Steel Bridge," giving price per ton c.i.f. delivered on railway wharf at Bangkok, will be received, up to 10 a.m. on June 1, by the Director-General, Royal Railway Department (Broad Gauge), Bangkok, at which office copies of the specification and drawings may be obtained on payment of 5 ticals (about 7s. 8d.) each.

New Ganges Bridge.—Despite the war, work on the second largest bridge ever constructed by British engineers, namely, that across the main Ganges at Sara, in Bengal, is up to time. A service of goods trains has been arranged for. The bridge is to be opened to passenger trains as soon as the metre gauge of the lines on the Northern side is converted to the 5 ft. 6 in. width of the Southern. Training works, 5,000 ft. long down both river banks, which cost three-quarters of a million sterling, keep the river to its course through the bridge. The bridge, which has a total river length of 5,900 ft., and, including land approaches, measures 15 miles, has cost roughly three and a quarter millions sterling. One of the principal advantages afforded will be a direct train connection between Calcutta and Darjeeling, the journey having hitherto been broken by steamer transit across the river. Apart from the convenience to the Government and the Himalaya tourist traffic, the real justification for the great undertaking will be the service rendered to the vast tea and jute growing tracts of Upper and Eastern Bengal, which will henceforward be enabled to convey their produce to the mills and docks of Calcutta with greater speed and economy.

Malay Peninsular Lines.—The *Straits Echo* learns from Singora correspondents that good progress is being made on the section of railway line between Uta-pao and the Perlis frontier. The distance is about 30 miles and on the first ten miles the earth work is already finished. The next ten miles is well in hand, and work soon will be in progress along the whole section. From the Perlis frontier to Alor Star is 42 miles. This is the backward section on the line. The line from Bukit Mertajam to Alor Star is rapidly approaching completion, whilst northwards of Uta-pao the railway is open for ordinary passenger traffic to Tung-Sawng (the junction with the Trang line) and is open for construction trains as far north as Bandon, some sixty miles beyond Tung-Sawng.

Tram Fares in Tokyo.—At the recent meeting of the Tokyo City Electric Enterprise Investigation Committee one of the municipal officials stated that the receipts from the enterprises were not sufficient to meet the repayment of the municipal loans of 90,000,000 yen to 1916 and those to the amount of 16,000,000 yen to fall due in the following year. The municipal authorties propossed raising of tram fares in the immediate future by at least 1 sen per ticket. Apparently this proposal has caused indignation among some sections of the citizens, who are backed up by prominent members of the City Assembly A certain member of the Assembly in criticising the measure is said to have suggested that it was desirable to abolish the transit tax and add the sum thus saved to the fares so that no increase in the citizens' burden would result from the attempt at appreciation of the municipal revenue.

Tram Plan.—Efforts to make the Hakone district a gigantic national park, are being furthered by the directors of the Odawara tramway company who have announced that they will extend their lines to Gora, about two miles and a half beyond the present terminus at Yumoto into the heart of the mountains, passing through Miyanoshita. At Gora, hundreds of villas will be built. The company has decided to issue a loan of yen 1,300,000, which will be raised by the Industrial Bank. The loan is to bear interest at 8 per cent. and be issued at Y97.

Manila Street Car Line:—For the first ten months of 1914 as compared with previous year, the street car company in Manila operated its cars at a decrease in net earnings of approximately 39 per cent. The actual decrease in receipts from the railway department were $48,882, or approximately 7 per cent; the increase in actual cash expenditures for operation amounted to $60,473, or approximately 15 per cent; the outlay for track and roadway, overhead trolley system, etc., increased for the period $28,866, or approximately 43 per cent; the maintenance of cars, shop machinery, and tools increased $37,363, or approximately 82 per cent; the net earnings from operation decreased $109,355, or approximately 39 per cent. During the period mentioned the company spent $117,905 in improvements over and above those mentioned.

The following table gives the number of passengers carried during the first 11 months of 1914:

Period.	1914	1914
January-June	10,441,713	10,217,900
July	1,521,929	1,692,046
August	1,537,581	1,746,263
September	1,214,588	1,685,294
October	1,510,593	1,790,381
November	1,450,775	1,776,212
Total	17,677,179	18,914,096

The foregoing shows that the number of passengers carried during the first six months of the period under discussion exceeded the number for the corresponding period of the preceding year by 223,813, or about 2 per cent. but that the number carried for the last five months of the period shows a decrease of 1,460,730, or about 17 per cent. During 1914 the company erected 4 public waiting stations along its line costing about $1,000, and added to its equipment 6 modern, center-entrance, steel cars of latest design and construction, costing $33,000, and rebuilt 20 of its old cars at a cost of $20,000.

Karachi Tram Extension.—The Karachi Tramway Co. has received a franchise to extend its tramway lines. The new line has been needed for some time and promises to be profitable. Actual construction probably will be delayed a short time, but owing to the war labor here is now cheap, and work probably will be undertaken at no distant date. The line is electric. Firms desiring to secure details of the new work should write to the manager Karachi Electric Tramway Co., Karachi, Sind, Northwest India.

Indian Railway Returns.—The recently issued Administration Report on Railways in India covers the financial year from April 1, 1913, to March 31, 1914. In that time the Indian state railways had better gross and net earnings than in the previous fiscal year, but owing to increased interest charges the percentage of net earnings to capital outlay fell from 6.48 to 6.19 per cent. Operation resulted in a surplus to the state of $27,729,765 over and above interest charges and annuity payments connected with the purchase of railways by the state, whereas the surplus last year was $27,891,530. On March 31, 1914, the mileage of all the state and privately owned railways in India was 34,656 miles, 1,053 miles having been added during the year. The gross earnings of all the railways from April 1 to March 31 were $206,0171344, as compared with $199,936,186, an increase of $6,081,158, which was partly offset by increases in operating expenses of $5,663,518. The net earnings were thus $99,322,848, as against $98,905,209 in 1912-13. There was some increase in the passenger traffic, the number of passengers carried being 457,717,900. The passenger revenue was $68,850,322, of which by far the larger proportion, $59,519,374, was from third-class traffic. The average rate for all classes of passengers, slightly over 4 mills per mile, and the average distance traveled, 36.3 miles, have not materially changed since 1884.

Atami Line Next Year.—It is reported that the Japanese government has decided on the construction of the proposed Atami railway line commencing in the next fiscal year. According to the government's plan, as reported by the Japanese papers, the construction of the line is to be finished in eight year at a cost of Y.24,000,000. For the next fiscal year, the government will put aside about Y.600,000, with which the construction of a big tunnel for the line is to be commenced. This line had been planned several years ago, and its construction was once commenced, but the work was

postponed in the time of the last cabinet, which was eager to curtail every possible appropriation for retrenchment. Other lines to be built in the next seven years are a line from Murakanu to Akita, one from Kawanoye to Saijo, that from Nayose to Simowakubetsu, and the Riumoye—Masike lines.

Szechuan-Hankow Line.—Road laying is now in rapid progress for the Szechuan-Hankow Railway up the Han river and unlike the former times all the people in the vicinity are pleased to see the work going on and expect better times after its completion. Many of the farmers have been enriched by the sale of land to the railway administration, and the prices of the low-lying farms have increased in view of the fact that by the construction of a road higher than their dykes no inundation need be feared in the future.

The Russo-Mongolian Railway.—According to a Japanese contemporary, the Russians are preparing to construct a double track railway from Kiachta to Urga. The right for building this railway is said to have been recently conceded to the Russians by the Urga Government. In taking this step, Russia, according to the newspaper report, aims at co-operating with Japan to occupy an important position in commercial dealings with the Chinese. A party of Russian engineers has been sent out to inspect the various places through which the projected line will pass. The work of building the railway will be started this Spring and the Russian Authorities expect to complete the work without undue delay.

BRIDGES

Manila, Pasig River Bridge.—Recommending the construction at a total cost of P1,280,000 of a three span reinforced concrete arch bridge across the Pasig River at the calle Rosario or plaza Moraga location, the bridge committee report (based on the recommendations of a sub-committee composed of W. L. Gorton of the bureau of public works as chairman, Jose P. Katigbak, acting city engineer, and L. F. Goodale, consulting engineer to the board of public utilities) states that four projects were considered in connection with the trans-Pasig traffic problem. These were:

(1) A tunnel under the Pasig from a point near the monument at the end of Malecon drive.

(2) A tunnel under the Pasig at the calle Rosario location.

(3) A bridge across the river near the Anda monument, and

(4) A bridge across the river at the best available point for the accommodation of traffic formerly passing over the bridge of Spain.

In considering the first of these projects it was found that the cost of a tunnel would approximate P5,000,000, which in the present state of the government finances, is a prohibitive figure.

The second project was adversely reported on by the committee for the same reason, and for the additional one that in that locality it would be practically impossible to secure land for the proper approaches.

The third project was considered desirable by the committee on account of the fact that a bridge so located would directly stimulate the development of the new port district. The estimated cost of such a structure was given at P1,500,000, only slightly in excess of that estimated for a bridge nearer the present bridge of Spain, but it was not considered that this matter was one of urgent necessity it being the sense of the committee that this project could will be deferred until a later date.

In connection with the fourth proposal the committee reported that the best available site appeared to be that at calle Rosario or plaza Moraga, where the committee recommended that P1,280,000 be spent in the construction of a three span reinforced concrete arch bridge. Of the amount so estimated as the total cost of the structure, actual construction is estimated as requiring an expenditure of P980,000, the remaining P300,000 being considered necessary for securing the right-of-way required for the approaches.

The various types of bridges proposed by the sub-committee and the estimated total cost of each is as follows:

Three span concrete arch bridge, P1,280,000.
Three span steel arch bridge, P1,150,000.
One span steel arch bridge, P1,413,000.
One span suspension bridge, P1,290,000.
Three span steel truss bridge, P855,000.

Bridge Contract for Siam.—In connection with the extension of the northern section of the Royal Siamese State Railways from Dene Chai to Chiengmai, a distance of 222 kilometres, a contract has recently been placed with the Cleveland Bridge and Engineering Company, Ltd., of Darlington, for the manufacture and delivery at Bangkok and Chumphon of no fewer than 27 open lattice type girder-bridges of varying dimensions ranging up to 45 metres in length.

The northern section of the Royal Siamese State Railways, in which the present contract lies, has for some years past been under German direction, and a considerable portion of the steel-work and rolling-stock equipment has hitherto been obtained from Germany, but the contract in question was submitted to tender by the leading British and American bridge and structural engineering firms.

COMMERCE AND INDUSTRY

China's Foreign Trade.—Since the outbreak of the European war, China's exports to foreign countries, especially to the belligerent countries, have been greatly decreased. According to the return of the Chinese Maritime Customs, the following figures represent the value of native goods exported to the various belligerent countries during 1914:—

England	Tls. 112,280,000
Germany	„ 6,110,000
Russia	„ 31,800,000
Japan	„ 138,310,000
France	„ 4,280,000
Austria...	„ 3,410,000
Belgium	„ 13,130,000

Cultivated Land in China.—An approximate estimate of the number of mow (approximately one-sixth acre) of cultivated land in the various provinces gives the following particulars:

Province	mow
Chihli	135,800,000
Shantung	75,970,000
Shansi	101,830,000
Honan	87,940,000
Kiangsu...	58,600,000
Anhui	74,810,000
Kiangsi	89,480,000
Chekiang	56,670,000
Fukien	66,320,000
Hupeh	91,410,000
Hunan	103,380,000
Shensi	95,270,000
Kansu	96,966,000
Szechuan	165,653,000
Kuantung	129,970,000
Kuangsi...	71,466,000
Yunnan	127,746,000
Kueichow	64,776,000
Sinkiang	81,120,000
Manchuria	241,805,000
Total......	2,146,962,000

Plan Silk-Weaving Company.—The Hangchow silk piecegoods merchants have sent Mr. King Yung-chung to Shanghai as representative to confer with silk merchants at this port as to the advisability of establishing a large silk-weaving factory to be worked with machinery on modern lines, as a checkmate to the rumoured intention of certain Japanese to form a joint concern with certain Chinese to do this kind of business. After several meetings, the silk piecegoods merchants of Hangchow, Soochow and Shanghai have decided jointly to float such a company. Their idea is reported to have the approval of the Chinese General Chamber of Commerce, the local authorities, the Native Products Protection Society and many prominent merchants of Shanghai. It is also understood that General Chu Jui of Chekiang will be asked to memorialize the President for protection and support. The capital of the proposed factory will be $3,000,000 at least. Many proprietors of large piecegoods shops have gone to Japan to study the methods of machine silk-weaving there and it is said that most of the Japanese mills are working with machinery made in Germany. Mr. Sheng Ping-chang, a Chinese who has been successful as a silk-weaving factory proprietor at Osaka, has returned with his family to China with the intention of transferring his own establishment from Osaka to Chapei in the Shanghai district where he has secured a plot of land.

Tsinan Match Factory.—The match factory at Tsinanfu, called the Chen-Hua Match Co., Ltd., has a capital of $200,000, of which one half is paid up. Fixed capital amounts to $53,000. The company has an official monopoly, no factory of a similar nature being permitted within the radius of 300 li. The superintendent, Tsung Liang-pi, has considerable experience in the business which he acquired during a 20 years' residence at Osaka. At present, 290 laborers are employed, of whom 200 are engaged in the manufacture of boxes. Their wages vary from $6 to $10 a month with board. The daily output is said to amount to 25 tons, one ton being made up of 6 cases, each of which contain 240 cartons of matches. Wholesale price is Tls. 23.50. For some time, the factory was closed owing to the lack of material, but is now in full operation again.

Development of Yunnan.—With its fertile soil and mild climate, Yunnan has become a promising field for various industrial undertakings, promoted in recent years under the auspices of the local officials, with some success. Formerly, the breeding of silkworms was hardly known, but silk is now one of its staple products and the amount of its annual output steadily increases. The process employed by the natives in manufacturing the silk is primitive and imperfect and the silk often loses its lustre and colour so that it cannot meet the requirements of foreign markets. To remedy this evil, the Governor has ordered magistrates of the various districts to establish technical schools to teach the people the scientific method of rearing silkworms, manufacturing silk and cultivating the mulberry trees.

In order to improve agriculture, agricultural schools and seminaries have been established and, under their auspices, exhibitions of agricultural products have been opened. Teachers are employed to deliver lectures to farmers on scientific methods of tilling the soil. To improve irrigation systems of the province, a central Conservancy Bureau has been established in the capital with branch offices in the various districts.

Within recent years cotton plants have been introduced and two varieties now are generally cultivated. One is the Tungchow cotton plant and the other is an American variety. The weather and the soil of the province have proved favourable for the growth of the American plants, which yield fine crops. Yunnan is expected soon to rival the cotton-producing provinces in the Yangtze valley.

Shoe Factory Fails.—U.S. Consul General G. E. Anderson of Hongkong, reports: For the second time in the history of the business a shoe factory, equipped with modern shoemaking machinery and catering to both the foreign and the domestic trade in Hongkong and south China, has failed. The establishment has been operated for the past three years by Chinese capitalists, who have been connected with similar concerns on the Pacific coast of the United States and have had considerable experience in such lines. The factory seems to have failed simply for the reason that it was unable to compete with foreign shoes for the fine trade and with hand-made shoes for the Chinese and cheap trade. The manufacture of shoes on a modern basis and with modern factory equipment was commenced in Hongkong about 5½ years ago with mixed foreign and Chinese backing. It has been described in previous reports. Factory equipment was obtained from the United States and an expert from the United States was put in charge of the operation of the establishment. The product turned out was quite satisfactory and in some lines was unique, for the concern not only produced shoes upon ordinary lasts, but also manufactured footwear for bound-feet women. After about two years of operation, however, it was found that the itinerant Chinese shoemaker and the small Chinese shops could copy foreign shoes by hand at prices which made it difficult, if not impossible, to compete, and after further unsuccessful effort the factory was closed. Later on a new company was organized and the machinery was purchased, and with the revolution in some parts of Chinese dress following the political revolution in China there was a big demand for cheap shoes, and the factory did considerable business. About 1½ years ago it moved into larger quarters, and apparently it was becoming successful. Business in all lines has been bad in south China for the past 18 months, however, and of late months the factory lost money With the coming of the war in Europe there was an end to all hope of making it a success. The concern has a capacity of 500 pairs of shoes a day. The machines are those of the United Shoe Machinery Co.

Paper Pulp for Hongkong.—The small paper mill in Hongkong which is manufacturing newsprint and other paper of a cheap grade for use of the Chinese newspapers consumes about 300 tons of imported pulp annually. The pulp is imported from Europe in canvas-covered bales, 8 bales to a 2,240-pound ton, and costs £9 ($43.80) to £10 ($48.66) c. i. f. Hongkong. The pulp used is first-quality, easy-bleaching, sulphide wood pulp. Considerable quantities of local pulp material are used in the factory, the use of American pulp in the establishment being only a question of price.

American Trade in Far East.—Vice Consul Crawford M. Bishop of Harbin, says in connection with the question of obtaining return cargoes for ships bringing American products to Manchuria and Vladivostok, inquiries have been received for soya beans, which form the principal export from this region, and as the European markets have been partially closed by reason of the war it is not unlikely that this may form an important item for export. The port of Vladivostok is now kept open throughout the winter by means of ice-breakers. Freight traffic on the Trans-Siberian Railway, which was much congested at the beginning of the war, has been resumed. Moreover, the double-tracking of the Trans-Siberian Railway has been completed as far as Irkutsk, and the railway is in a better position than ever before for handling freight. Since the Panama Canal has been opened to commerce it is possible for direct shipments to be made between the eastern coast of the United States and Vladivostok.

China Making Panama Hats.—The increasing use of foreign headgear in China has encouraged the Chinese to supply the local demand. Hats and caps of Chinese make are often of excellent quality and can hold their own against foreign importations. Almost any style is now obtainable locally and Panama hats are among the most popular. A modern factory has been established at Chengtu, the capital of Szechuan Province, and its operation has been very successful. The hats are made from the leaf of a native palm that is abundant in this region. The leaves are cut into thin strips, bleached, and woven into hats that are scarcely distinguishable from the foreign product. About 200 workmen are employed, most of them apprentices, receiving per month the equivalent of approximately $2 United States currency, one-fourth being paid in cash and the balance in food, clothing, and shelter. The factory is airy, clean, and well lighted; the employees contented, happy, and apparently satisfied with the treatment they receive. The manager of the hat factory is willing to sell a good quality of hats for men at $20 United States currency per dozen, delivered at Chungking or Hankow; larger hats of the same grade for women's wear at $30 per dozen. The shape and style can be made to order according to specifications.

Chefoo Chamber of Commerce.—The Chefoo Foreign Chamber of Commerce is much concerned over the marked falling-off of trade of that port last year, and has decided to petition the Peking Government conjointly with the Chinese residents there to defer the disbursement of Taels 750,000 for the opening of the port of Lungkou to international trade and to make an investment in the construction of the breakwater at that port and of the Chefoo-Weihsien Railway.

Tea by Post for Russia.—The transportation of black tea and lump tea, to Samarkand and Bokhara, has been contracted for by a British merchant at Shanghai. The consignments are put through the international postal service as parcel packages, reaching Dairen by steamer and are forwarded by rail. The annual amount of business put through in this particular line of trade is worth about Y5,000,000 per annum. Authorities expressed their wish to make preparations for handling the parcel packages. It was agreed with the Postal authorities that business should be commenced with five or six hundred packages per steamer, but this number has been increased to two thousand in a few weeks. Ordinarily the through railway freight on tea between Shanghai and Moscow is about Y6.50 per pud, whilst by putting the goods through the postal service, the charge is reduced to only Y3.23, viz., almost 55 per cent. cheaper. If imported via Odessa the steamer freight is Y3, and via Vladivostok Y5, in both cases exclusive of the Customs duty and other incidental charges. The Postal authorities will clear from this traffic something like Y100,000 per annum. The parcel post charge is 80 sen per package of 1 cubic foot.

Philippine Exports Gain.—The total trade of the Philippine Islands shows a loss of P.7,614,910 in the total trade for the calendar year of 1914 as compared with the returns for 1613. Total exports in 1914 showed a gain of P.1,833,356, but the imports showed a loss of P.9,448,266.

The total trade for 1914 amounted to (following figures all in gold) $97,278,287. For the calendar year 1913 the total trade was $101,085,752. Exports for 1914 amounted to $48,689,634 and for the previous year $47,772,956. Imports for 1914 totaled $48,588,653 and for 1913 they were $53,312,786.

Plans Hog Farm.—The Philippine Vegetable-Oil Company, manufacturing coconut oil, has announced that it will undertake the breeding and feeding of blooded hogs, using the by-products of the oil factory. The company has acquired a ranch near Novaliches, Rizal, and shipments of Yorkshires, Berkshires, and Chester Whites have already come from Australia. It is expected that this experiment will result in a great improvement in the class of swine produced in the island, particularly in the vicinity of Manila. At present, despite the efforts of the Bureau of Agriculture to improve the breed, seconded by private importers, the grade of hog produced in the islands is low. Fresh pork is much sought after by the Filipinos in the markets, and the raising of even the mongrel native hog is found to be profitable.

Philippine Copra for Britain.—In the course of a recent report by American Consul Charles M. Hathaway of Hull, it is stated that the leading seed crushers and oil extractors of Hull—some of whom are also largely concerned in these industries in London and Liverpool—are apparently making preparations to embark in the extraction of palm-kernel and coconut oil, although palm kernels and copra have not heretofore been crushed in Hull in any quantity.

The extraction of palm-kernel oil seems to have progressed more rapidly than that of copra, and it is said that profitable results are in sight. However, there appears to be no doubt that coconut oil will be extensively produced in Hull in the near future. One firm is now crushing its first large batch of copra, this from Singapore. Others are making chemical analyses and working small parcels for practical tests, and machinery for the production of edible oil is, in several cases, known to be in process of installation. It is believed by this office that by January, 1915, Hull will be in position to take large quantities of copra.

The desirability of dealing with copra and palm kernels in Hull appears to have been brought to the attention of the local seed crushers' organisation by the British (Government) Board of Trade soon after the outbreak of the war, and the association has been as a body, investigating both lines since. As the extraction of copra oil on a large scale would require considerable extension of plant and the investment of considerable capital, the status of the newly established industry after the war is being carefully considered.

There seems to be no doubt of the profitableness of the undertaking so long as the war lasts and the trade of Hamburg is cut off; but some anxiety is expressed that, if conditions existing before the war should return, the German houses, supported by a ready market for copra cake in their own country, would have an advantage as against the British manufacturer, who must export most of his copra cake, as the British farmer has not learned its superior feed value.

Interviews had with various firms in Hull disclosed the fact that while they all had done some testing and analysing, none appeared to have examined any specimens of the Philippine product. A sample of ordinary fair merchantable Manila was obtained from London, and has been tested by two mills, and is now in process of testing by two others. The results so far are uncertain, and it is possible that the sample procured from London is not of sufficiently high grade to meet the local demand. However, this office is in direct communication with the Manila Merchants' Association, and it is hoped to procure exact information as to sun-dried Cebu, sun-dried and kiln-dried Manila, and other grades of Philippine copra, together with samples of each grade.

Philippine Tobacco Prospects.—A Bureau of Agriculture inspector who has recently returned from the Cagayan valley reports that the crop prospects for 1915, as far as tobacco is concerned, are very discouraging. The rainy season ended unusually early and since then very little rain has fallen. The anxiously expected winter rains have also failed. The first and early-sown seed beds were almost entirely destroyed by the drought and as many as three additional sowings have been made.

There are few if any of the planters who will succeed in setting out the usual area planted, and perhaps as an average not more than one half of the area planted in 1914 will be planted this year. The Cagayan valley usually produces about one-half the annual Philippine crop of tobacco. It is now so late that even with favourable weather conditions henceforth, the 1915 crop of tobacco will be very short.

Will Test Tax Law.—The energency internal revenue law passed by the last legislature, is to be tested in court as to its constitutionality, by the Standard Oil Company on the ground that it is unconstitutional as it provides for the collection of an import duty upon products imported from the United States. The collector of customs is charged with the collection of the internal revenue tax on such articles as petroleum, gasoline, naptha, and lubricating oils mentioned in the law but the Standard Oil Company wants the collections to be made by the collector of internal revenue because then collections are made on actual sales. The importations of these oils affected by the law last year in illuminating oil reached the total of 55,083,834 liters on which a duty of P.32,676 was collected on a value of P.2,440,346. Of this amount 48,251,738 liters, valued at P.2,202,352, was imported from the United States. Importations of naptha amount-to 5.180,338 liters, valued at P.456,232, all of which came from the United Stated. Importations of lubricating oils amounted to 253,625 liters valued at P.286,448.

Camphor From Shrubs.—The Bureau of Science of the Philippine government is making a study of the plant known as *Blumea balsamifera,* known by the native in the Philippines as "sambon" or "gabuen," and which produces camphor. The shrub is one of the most common weeds in the Philippines. It grows from 5 to 8 feet high, with a stem almost woody in texture, and has long been used by the natives of the Philippines as well as by natives of China for medicinal purposes. The Chinese in parts of Kwangtung and Kwangsi Provinces already distill considerable camphor from the plant, the chief drawback to the more extensive use of it being the amount of labor required to secure the gum. It is well to note in this connection that the Bureau of Forestry at Manila is introducing the ordinary camphor tree of China and Japan into the mountain districts of Luzo to build up future camphor production in the islands.

Pearl Fishing Suspended.—The pearl-fishing industry of the Philippine Islands, which heretofore has yielded the government about $25,000 annual revenue and furnished employment to about 1,000 men, is practically dead, as a result of the loss of the European market for shells, due to the war.

Those interested in the industry are now trying to get the legislature to modify the law which authorizes municipalities to fix the tax upon pearl fishing within their respective jurisdictions At present the various municipalities exact a license tax on pearl fishing, varying from $50 to $500 per year, according to one authority. These rates are considered prohibitive, and as a result practically the whole pearl fleet of the islands is confined to the waters about Jolo.

Rice Crop Fails.—The prevailing drought throughout central Luzon has seriously affected the rice crop. Some observers estimate that the crop will be injured to the extent of 50 per cent in Rizal Province immediately surrounding Manila. Reports from Mariquina Valley, one of the most fertile regions in the Province, say that the rice plants there have dried up. In Nueva Ecija and Pangasinan Provinces, both large producers of rice, the latter the largest perhaps in the islands the drought has not yet seriously injured the growing rice. The Bicol Valley. in south central Luzon, is affected by the drought, and the rice crop there is already practically a failure.

Modern Sugar Mill Starts.—The new sugar mill at Calamba, on the Sugar Estates property, has begun operation. This is one of the most modern mills in the islands and is expected to do much to regenerate the sugar industry through that section of Luzon. Its full capacity is 1,200 tons of cane per day, and from the promising way in which the new machinery is starting off it is expected that the mill will soon be running at its maximum capacity.

Philippine Hemp-Grading.—New York importers of hemp (abaca) from the Philippines are offering the product for sale there by the new gradings; this fact, taken with the further fact that the producers and buyers are now showing less opposition to the new law than was manifested before the recent campaign of explanation and assistance conducted by the Bureau of Agriculture in the hemp Provinces, is likely to make a futher postponement of putting the law in operation seem unnecessary.

Japan's China Trade.—The falling-off in Japan's China trade, which set in in the early part of last year, has apparently reached a stage that may well cause apprehension among those interested.

In the Finance Department figures for the closing days of January, an alarming decrease is reported both in exports and imports. Exports are valued, according to the official report, at 2,947,386 yen against 5.852,729 yen of the corresponding period of last year, thus exhibiting a falling-off by 2,905,343 yen. The figures for the month put together, the falling-off comes to 3,512,533 yen, the whole figure being 8,698,164 yen against 12,210,697 yen of the corresponding term of last year.

In imports the figures for the thirty days are not so alarmingly lessened, reaching 3,112,428 yen against 3,473,365 yen for last year, a total decrease of 360,937 yen.

Yokohama Heavy Loser.—According to investigation of the Yokohama Chamber of Commerce, foreign trade in Yokohama during last year was greatly affected by the war, in all directions. Exports were 266,937,715 yen, a decrease of 49,883,673 compared with the preceding year, while imports were valued at 177,457,318, a decrease of 57,644,787 yen.

Relief of Silk Industry.—The Japanese Privy Council has rejected the Bill for relieving the existing depression in the sericultural and silk yarn industry. In consequence, the Government has decided to induce capitalists to organize a guild on a capital of Y2,000,000 and will grant a subsidy thereto for administering the intended relief.

According to investigations of the Department of Agriculture and Commerce, the total export of raw silk from Japan last year was 21,532,671 kin, (one kin equals one and one-third pounds) valued at yen 169,720,775. In comparison to the figures of the year before, in quantity there was a decrease of 7,729,690 kin, and in value yen 32,801,848. Altogether there was a remarkable decrease of 15 per cent from the year before.

Japan's Rice Yield.—The actual yield of rice for 1914 is 57,007,054 koku which shows an increase of 260,505 koku as compared with the second estimates. The figures showed an increase of 6,751,787 koku and also 6,371,821 koku when compared with those of the preceding year and the average year respectively.

Yokohama Factory Zone.—A statistical report on Yokohama's factory system laid out by the city in 1912 for the wholesale removal of factories to half rural parts of the city, shows 353 factories in the city, of which 268 were outside the prescribed zone.

In the zone were, Dyeing and weaving plants, 17; Machine and tool making, 12; Chemical industries, 18; Comestibles, 6; Sundry, 39; a Total of 85.

In the city, Dyeing and weaving, 55; Machin and tool making, 42; Chemical industries, 17; Comestibles, 53; Sundry, 122; a Total of 268.

Trade of Chosen.—The trade of Chosen (Korean) ports was favourable during the past month, official figures showing exports at 3,900,000 *yen* and imports at 2,970,000 *yen*. This means an increase of 370,000 *yen* in exports and a decrease of 930,000 yen in imports as compared with the corresponding month of the past year. The balance thus comes to 930,000 *yen*, in favour of exports.

It is reported that the total amount of orders for war materials placed by the Russian Government to the Japanese manufacturers has reached to yen 60,000,000 since the opening of the war and Korea is to have a share, as an order for the supply of 1,000,000 pairs of boots is to be split, giving 200,000 pairs to the Chosen Leather Goods Company. The price agreed upon is said to be yen 7.50 per pair.

Bean Cake to Japan.—The export of Beans and Bean Cake to Japan for 1914 and 1913 were as follow:—

From Manchuria—Beans 1914, 2,516,076 piculs 1913, 1,778,516 piculs.

Bean Cake 1914, 10,460,606; 1913, 12,115,330.

From Chosen—Beans, 1914, 1,147,085 piculs; 1913, 1,592,281 piculs.

The marked increase of the figures for Manchurian Beans in 1914 over 1913 is put down to the good crops throughout Manchuria and the utter stoppage of shipment to Europe on the outbreak of the European War. The reverse phenomenon in the case of Chosen Beans in 1914 is chiefly attributed to the failure of crops in the previous year.

The decrease in the export of Bean Cake is explained by the ebb of the purchasing power of the agricultural classes in Japan in consequence of the heavy depreciation in the rice market, the cake being a favorite paddy field fertilizer.

Japanese Paper Clothes.—"Kamiko," as paper clothing is called in Japan, is made of the real Japanese paper manufactured from mulberry bark. The paper has little "size" in it, and, though soft and warm, a thin layer of silk wadding is placed between two sheets of the paper and the whole is quilted. Velvet shirts and drawers made in this way are more comfortable than flannels. The Japanese soldiers realized the value of this kind of clothing when they had to weather a Siberian winter. This clothing is not washable, but a company in Yokohama is supplying large quantities of the paper shirts to the Russian Army. The garment is made of tough, soft fabric, strong enough to hold buttons sewn on in the ordinary way, and appears to be very serviceable.

The Russian government has placed with leading Japanese firms another big order, for 2,000,000 suits of summer clothes, 5,000 pieces of bread bags, 1,000 tons of copper and various other items.

Oil Export of Japan.—The demand for various oils for export to Europe continues to be strong, and the dealers who had once been anxious to dispose of fish oil at yen 5.50 per 100 kin ($2.75 per 133⅓ pounds,) are now quite reserved and the quotation is now yen 8.50 with stronger feeling. The quotations at present are: herring oil, yen 10 per 100 kin; whale oil, yen 11 per 100 kin; and shark oil, yen 10.50 per 100 kin; but it is said that the producers have practically no stock of whale oil to offer for sale.

As to vegetable oils, the demand is keen and price is souring up as in the case of fish oils. Bean oil is quoted at yen 13 per 100 kin, and tea seed oil at yen 14.50. The demand is also strong for linseed oil. But no transaction of any substantial amount is possible till the end of June, owing to lack of material.

Mukden's Fire Engine.—A new gasoline fire engine has been purchased by the Japanese Settlement at Mukden. The engine develops 12 horse-power at 700 revs. per minute with a capacity of 200 koku per hour.

Penchihu Furnace Starts.—The first charge of pig iron from the new furnace recently erected by the Penchihu Colliery & Mining Co. was drawn last month in the presence of leading officials of the company.

Dairen Soap Factory.—The Oriental Soap Factory, promoted by Japanese capitalists, has opened an office and has invited subscription to its shares to the amount of Y500,000. The Dairen Savings Bank has been arranged to receive the quarterly instalments. Negotiations to amalgamate the three local soap factories fell through but these factories are said to be ready to fuse into one concern to compete with the new company in project. In case the fusion goes through it is expected that the new company will abandon its plans.

Manchurian Wheat.—The contracted export of 20,000,000 puds (333,333 tons) of Siberian wheat from Vladivostok to France in the course of four months has sent up the North Manchurian market from 85 kopeks on about February 10th to 2.02 kopeks at a recent date (or about $1.75 per 133⅓ pounds.) Some foreign merchants are in North Manchuria buying up every grain of wheat they can contract for with the intention of exporting their purchases via the Amur as soon as the River reopens to navigation. A corresponding rise in the price of flour has followed. The total cereals for Europe now awaiting shipment by sea on Dairen Wharves are put at from 40,000 to 50,000 tons.

Tsuruga Trade Increases.—Trade of Tsuruga in January and February reached a total of yen 6,900,250. Last year the total foreign trade was yen 16,296,897, consequently, the business of two months in this year shows an increase of 603,353 yen than the total amount of the previous year. The enormous increase was due to the exports of woollen goods and military supplies to the Russian government.

Japan Needs Chemicals.—Chemicals of British and American manufacture have begun to be imported to fill the urgent need as warehoused stocks are exhausted. In the case of salycilic acid, none is obtainable. This substance is indispensable to Japanese *sake* as antiseptic. Attempts have been made to manufacture it from phenol (carbolic acid), but phenol itself has run short. As a last resort coal tar is being gathered from the gas works in order to use it as a material from which to manufacture chemicals.

Soap Industry in Japan.—According to a Yokohama newspaper the importation of soap is decreasing annually due to a gradual development of this particular line of domestic industry, although it has not yet attained the same level as in European countries. The imports of perfumed soap during 1913 amounted to $92,308, while unperfumed soap imported during the same period amounted to $78,567. Imports of unperfumed soap during the past five years have been as follows: 1909, $233,803; 1910, $261,204; 1911, $276,051; 1912, $117,774; 1913, $78,567.

The share from the four leading countries in 1913 was as follows: France, $60,898; England, $6,610; Germany, $6,346; United States, $4,582.

The paper further states that the annual output by various soap factories in Japan amounts in value to $3,084,000, 50 per cent being produced in Osaka, 40 per cent in Tokyo, and 10 per cent in other districts.

Japan Losing China Trade.—The falling-off in Japan's China trade, which set in in the early part of last year, has apparently reached a stage that may well cause apprehension among those interested, says the *Japan Financial and Economic Monthly*. In the Finance Department's figures for the closing days of January, an alarming decrease is reported both in exports and imports. Exports were 2,947,386 *yen* against 5,852,729 *yen* in the corresponding period of last year, thus exhibiting a falling off by 2,905,343 *yen*. The figures for the full month show a decrease of 3,512,533 *yen* from 12,210,667 *yen* in 1914.

Imports are not so alarmingly lessened, for the month's total reaches 3,112,428 *yen* against 3,473,365 *yen* for last year, the decrease being 360,937 *yen*.

Detailed figures with 1,000 omitted are as follows:—

EXPORTS

	January, 1915	January, 1914
Manchuria	692	530
North China	2,449	2,276
Central China.	5,432	9,277
South China...	125	128
Total.	8,698	12,211

IMPORTS

	January, 1915	January, 1914
Manchuria	215	142
North China...	1,223	538
Central China.	1,548	2,639
South China...	125	128
Total.	3,112	3,173

The falling-off, which reaches an alarming extent in exports, is principally due to the dwindling of trade with the central districts of China. Refined sugar, cotton yarn, cotton textile fabrics and coal, are the most important items in the general decrease.

Japan's Trade with Britain.—According to the *Yorodzu*, Japan's trade with Great Britain for the past three years is as follows:—

	Exports. Yen.	Imports. Yen.
1912	29,790,000	116,000,000
1913	32,860,000	122,000,000
1914	33,080,000	92,000,000

Japan's Raw Silk Exports.—According to the latest official investigations the export of raw silk for the past season comes to 21,532,671 *kin*, valued at 168,808,762 *yen*. In comparison with the preceding season this figure is a decrease by 7,729,690 *kin* in the volume and 32,801,848 *yen* in the value, fully 15 per cent.

World's Rubber Harvest.—Pending receipt of further official figures, "The World's Rubber Position" (London: Rickinson and Son) gives the rubber output for 1914 at 70,770 tons for Plantation, 37,000 tons for Brazilian, and 12,000 tons for the rest, a total of 119,770 tons. This compares with an output of 108,440 tons in 1913, being an increase of 10.4 per cent. As to the distribution in 1914 the following figures (in tons) are given, the figures for 1913 being set out for comparison in brackets:—

America, 55,000; Canada, 1,770 (United States and Canada, 48,000); Great Britain, 18,000 (18,640); Germany, 13,000 (15,500); France, 7,000 (6 500); Belgium, 1,000 (3,000); Russia, 14,000 (9,000); Austria-Hungary, &c., 2,000 (3,000); Italy, &c., 4,000 (2,000); Scandinavia, 2 000 (1,500); Japan and Australia, 2,000 (1,300); total, 1914, 119,770 tons, against 108,440 tons in 1913.

The total estimated output for 1915 of all sorts is 120,000 tons, which is only .01 per cent. of increase over 1914, though Plantation goes up to 85,000 tons. Brazil is, however, only credited with 30,000 tons, and the rest of the world with 5,000 tons.

F. M. S. Rubber Exports.—According to telegraphic information received by the Malay States Information Agency in London, the exports of cultivated rubber from the Straits Settlements in 1914 amounted to 19,727 tons, as compared with 11,889 tons in 1913. These figures include transhipments of rubber from various places in the neighborhood of the Straits Settlements, such as Borneo, Java, Sumatra, and the non-Federated Malay States.

Indo-China Prosperous.—According to a recent statement by the Governor, Indo-China's wonderful natural resources had enabled the despatch since the beginning of the war of no less than 300,000 tons of rice to France and the allies, and 200,000 tons of coal for military purposes. During 1915 the colony could supply a million tons of rice, 200,000 tons of maize, a similar quantity of salt and 700,000 tons of coal. Thanks to the financial situation the colony had been able to place Piastres 20 millions at the disposal of the home government. One million had already been devoted to the purchase of provisions required by the Minister of War. In spite of the crisis, the economic position of the colony was thoroughly sound. The total value of exports and imports during the first four months of the war amounted to 130 millions. This figure, though less than the total for the corresponding months of 1913, was higher than the corresponding totals of 1911 and 1912. The failures and liquidations during the year 1914 to date were one third less than in the preceding years. Since the beginning of the war the budget surpluses amounted to six million piastres. This figure had only once been exceeded, in 1913. It was three times as great as the biggest surpluses that had been realised before that date.

Java Tea Crop.—The London firm of Messrs. Brooke, Bodd and Co., Ltd., in their review of the tea trade for the year, write:—A large increase in the Java crop was expected, but anticipations were not fulfilled. The increase in exports was only 3,000,000 lbs., whereas 10,000,000 or 11,000,000 had been foretold. Weather was unfavourable, and there were labour difficulties. The quality of this year's Java crop was above the average. The United Kingdom took about 500,000 lbs. more than last year, America and Canada a little more, Australia a million less, and Russia over 3,000,000 lbs. more. The greater part of the 1,800,000 lbs. sent to Singapore also probably went eventually to Russia. Sumatra has now taken her place as one of the tea-producing countries of the world, and must be considered as having passed the experimental stage. The tea compares favourably with the best turned out by the planters in India, Ceylon, and Java.

Indian Cotton Crop Forecast.—The director of statistics of the Indian Government in a memorandum on the cotton-crop season of 1914-15 states that the total area in cotton amounts to 24,000,000 acres. The total yield is estimated at 4,900,000 bales of 400 pounds each. The outturn is 5 per cent less than last year. The season has been favorable, except that heavy rains adversely affected the crop in certain districts. The final report soon will be published.

Rice Crop in Japan.—The Government has published a statement on the actual result of the rice harvest for the season just closed, which is estimated at 57,007,054 koku. It is 6,751,787 koku above the previous record and 6,371,821 koku above the normal. This gain of between 13 and 12½ per cent. over previous records is unprecedented.

Burma's Rice Crop.—The summary of the fourth forecast of the rice crop in Burma for the year 1914-15 states: The fourth forecast of the Burma rice crop shows a cropped area of 9,926,000 acres, a decrease of 130,000 acres on last year's actuals. The gross outturn will amount to about 5,900,000 tons of unhusked rice or an exportable surplus of some 3,400,000 tons of unhusked rice, equivalent to 2,600,000 tons of cargo rice.

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Siemens China Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
Shewan, Tomes & Co.
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Western Electric Co.

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Fearon, Daniel & Co.
General Electric Co
Mather & Platt, Ltd.
Shewan, Tomes & Co.
Siemens China Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
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Railway Signals
Railway Signal Co.

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The Far Eastern Review

Engineering :-: Mining :-: Commerce

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THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XI. SHANGHAI, APRIL, 1915 No. 11

HUAI RIVER CONSERVANCY PROJECT

Seven Million Acres to be Rendered Immune from Floods by Reclamation Work

REPORT OF THE AMERICAN RED CROSS BOARD OF ENGINEERS

The Board of Engineers appointed by the American National Red Cross in accordance with an arrangement with the Republic of China to make certain investigations connected with the Huai River Conservancy Project in the provinces of Kiangsu and Anhwei submits the following report:

The Board was instructed to make:

(*a*) "A further survey and investigation of the physical conditions affecting the Huai River Conservancy that must govern the engineering question of feasibility of that project.

(*b*) "The determination with as close an approach to accuracy as may be practicable of the area of present waste and submerged public lands that through the regulation works will be reclaimed for agricultural, social, or industrial purposes, together with an estimation of their real and annual income value.

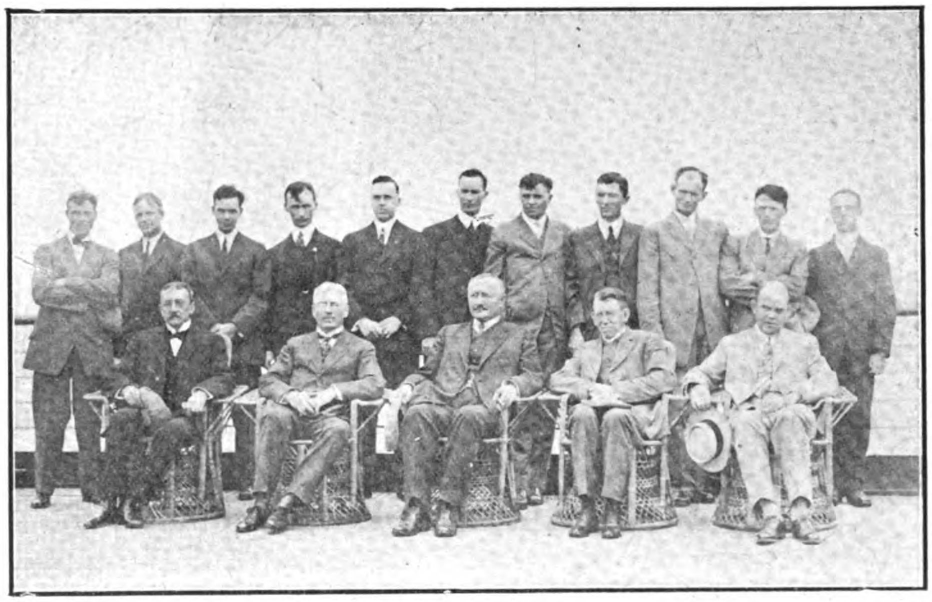
(*c*) "The determination of the approximate area of privately owned lands that will be improved in productiveness and value by means of the regulation works; also an estimation of the annual or income value per unit area of the benefited lands expected to result from these regulation works, etc.

(*d*) "An estimation of the tonnage and net revenue derivable therefrom on the traffic that should exist on that portion of the Grand Canal included within the area of this conservancy project.

(*e*) "An estimate of cost of the proposed regulation and reclamation works required to effect the Huai River Conservancy, the time required for construction and installation, and the annual cost of operation, renewals, and maintenance."

The Board was further instructed to submit its report on or before November 1, 1914.

The Huai River Conservancy area, as defined by agreement, comprises:



AMERICAN NATIONAL RED CROSS CONSERVANCY ENGINEERS TO CHINA.
Front row, left to right:—Mr. C. D. Jameson, General Adviser; Mr. A. P. Davis, Colonel Sibert, Professor Meade; Mr. Cornish, Principal Assistant.

The drainage areas of the Huai River, the Inner Grand Canal, the Yi River, the Sze River, and the Shu River, situated in Honan, Anhwei, and Kiangsu provinces, China, shown on General Map.

The object of the conservancy is:

To improve these watercourses, especially as to the physical conditions that affect flooding of arable lands, continual submergence of lands, or submergence to such an extent as to create swamps.

The Board sailed from Vancouver, B. C., on June 11, 1914, and landed at Shanghai June 28, accompanied by an engineering and clerical force:

First, to check the general elevations already obtained in the area in question by the Chinese Conservancy Bureau;

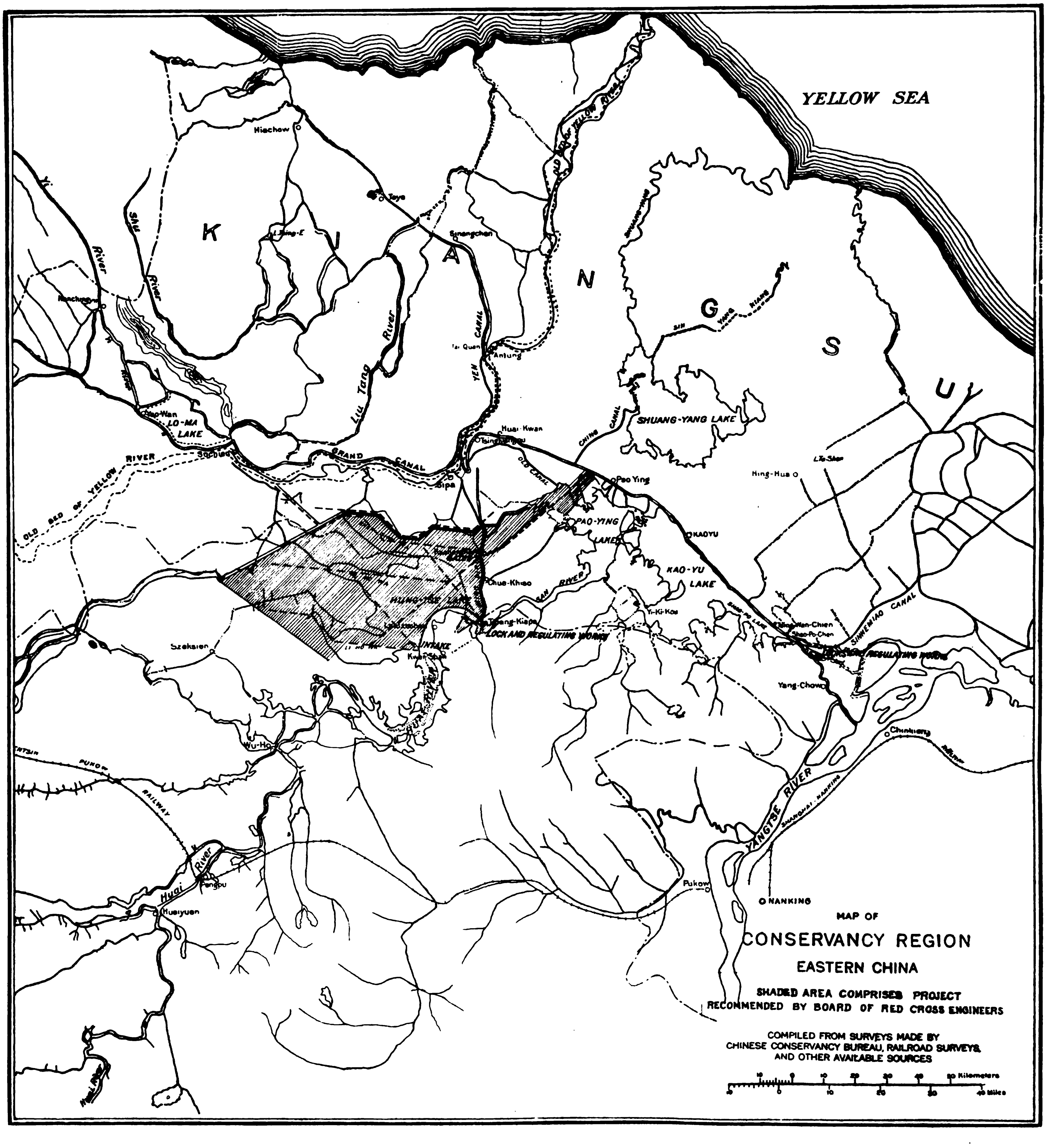
Second, to make such special additional surveys as thought necessary and as time would permit;

Third, to gage streams in the area in question.

The field parties were organized, outfitted, and dispatched to the field by July 5.

One party was directed to check by actual survey the elevations, hydrography, and topography in and along the Grand Canal from the Yangtse River to Tsingkiangpu, including the lakes to the west; thence through the Hungtse Lake and up the Huai.

Another party was dispatched to Pengpu, where the Tientsin-Pukow Railway crosses the Huai River, to establish a permanent gaging station in that vicinity and connect same with the line of levels brought up the Huai.



Another party was directed to run a line of levels down the Yen Canal from Tsingkiangpu to the sea at Haichow, and to obtain certain specified physical data concerning that waterway.

Another party was directed to make two sections of the present Yellow River bed and one of the old bed near the point where that river changed to its present channel in 1853.

The object of the surveys was to find the slope of trunk streams in the area in question to the sea and to the Yangtse River, to determine the maximum amount of water that it was necessary to pass to one or both places during floods, to obtain detailed topographic information necessary for planning the project, and such data as would assist the Board in forming an opinion as to the probability of the Yellow River leaving its present course and usurping the bed of the Huai and as to any precautions necessary to prevent such an occurrence.

The Chinese Conservancy Bureau had made an outline map of the area in question and had determined the elevations of the streams and lake beds above sea, together with their approximate

locations. Check lines of levels run by the Board's survey parties proved that the level work referred to above was well done. Practically nothing, however, was known as to the flood discharge of the streams involved in the project.

The Board made the following inspection trips:

First. From Pukow, on the Yangtse River, by the Tientsin-Pukow Railway, to the point where this road crosses the Grand Canal.

Second. By house-boat on the Huai River from twelve miles above Pengpu to and across Hungtse Lake to the Grand Canal.

Third. By house-boat on the Grand Canal from Chinkiang to the mouth of the Yi River at Yaowan, thence on horseback up a branch of the Yi to the channel that runs into Loma Lake.

Fourth. By boat to the mouth of the Grand Canal. The Board inspected the Loma Lake country and all important channels leading from the Grand Canal.

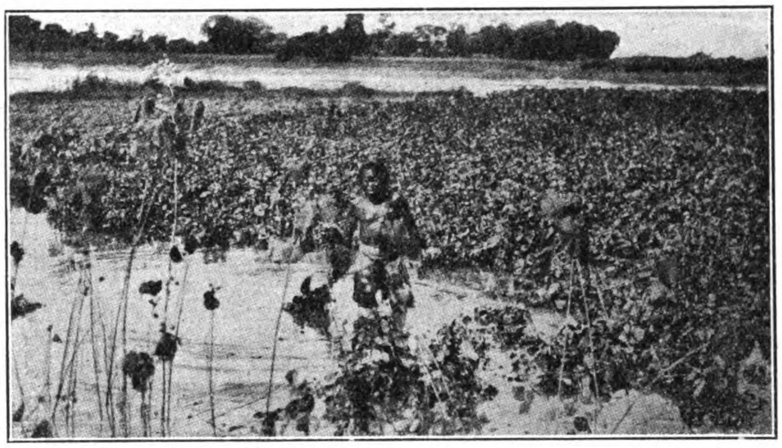
Fifth. By steamer up the Yangtse to Hankow, thence by rail to Kaifengfu; crossing the western edge of the Huai basin, thence by horseback to a point on the Yellow River north of Kaifengfu; thence by boat to a point a short distance below the place where the river left its old channel in 1853. Thence to Kaifengfu overland, crossing the old bed of the Yellow River; thence to Peking by the Hankow-Peking Railroad, returning to Shanghai by the Tientsin-Pukow Railway.

Mr. A. P. Davis made a special trip down the Yen Canal to its crossing of the Liutang River.

Other trips through the mouths of the Grand Canal, across Hungtse Lake and into the lakes to the west of the Grand Canal south of Tsingkiangpu were also made. Travel over the greater part of the area was difficult and slow, and the time available was not sufficient for a detailed examination of the entire region.

History

Geographically and topographically the conservancy area outlined in the Board's instructions is divided into two parts separated by the old channel of the Yellow River, which that stream occupied from 1324 to 1853.



Chinese Farmer Saving Bean Crop From Yi River Flood.

First. The Sze, Yi and Shu areas. These streams, lying north and east of the old river bed, drain the mountainous country of Shantung. Their flood flow is torrential in character. Their lower course is quite flat and has been somewhat obstructed by artificial works; hence, their drainage to the Yellow Sea is imperfect.

Second. The Huai River area. This area, lying south and west of the old Yellow River bed, has a low gradient, and its former outlet has been practically closed by the deposits of the Yellow River. It has since established an outlet to the Yangtse through which the flood and low waters find imperfect relief.

Under local flood conditions the water from each of these areas passes, to a limited extent, by way of the Grand Canal, through the outlet of the other, but these areas constitute essentially separate problems, and should be and are herein treated separately except to the extent of their mutual interference.

The Yi, the Shu and the Sze Areas

The construction of the Grand Canal modified the course of the flood waters of the Yi and the Sze Rivers. All of such water, however, except a limited amount that passes through the Hungtse Lake and the Grand Canal south of Tsingkiangpu to the Yangtse River, finds its way as formerly, to the sea north of the old Yellow River bed. These flood waters, as well as those of the Shu, submerge the low lands on both sides of the Yen Canal. Practically the only important work done in this area was the construction of Yen Canal, directly across the natural drainage of the country. The operation of this canal involves the construction of temporary earthen dams across the branches of the Liutang River east to the Yen Canal. These dams are partially the cause of the smaller inundations west of the Yen Canal. The great inundations, however, would cover a large portion of this country irrespective of the Yen Canal.

The Huai River Area

The history of the Huai River district is so interwoven with that of the Yellow River and the Grand Canal that one cannot separate work done to meet conditions in the Huai River alone from that done for the Huai combined with the Yellow.

It is probable that prior to the time that the Yellow River usurped that portion of the Huai between the Hungtse Lake and the China Sea that the Hungtse Lake had considerable depth and acted, as at present, as a great regulating reservoir for the Huai, and that part of the channel of the Huai from this lake to the sea was simply an overflow channel from the lake.

After the Yellow River took possession of the lower part of the channel of the Huai and raised its flood surface and its bed, the flood level in Hungtse Lake was increased. This flood height was further increased and the lake bed raised by the Yellow River itself breaking into the Hungtse Lake during floods. This excessive height of Hungtse Lake due to the Huai and to the Yellow caused serious flooding of the country south of Hungtse Lake, both west and east of the Grand Canal, and the history of the country is full of descriptions of the loss of life and property resulting from these floods. To remedy this condition there was built during the Ming Dynasty a high earthen dike, presumably extending from the Grand Canal to high land west of Tsiangkiapa for the purpose of preventing the waters of Hungtse Lake and the Yellow River passing south and flooding the country to the southeast. During the reign of the third Emperor of the Manchu Dynasty a cut-stone retaining wall was built on the lake face of this earthen dike. Apparently some inadequate sluiceways were constructed originally through this dike.

The water being thus practically penned in as to a southern outlet, and having no other outlet than east to the sea through the Yellow River, excessive floods must undoubtedly have resulted in the country north of Hungtse Lake and the then course of the Yellow River. It apparently was then decided to make five large openings in this dike, such openings to be closed with removable dams, called by the Chinese "pas," that is, with dams built of material that could be removed when the Hungtse Lake reached a certain stage; and detailed instructions were promulgated concerning the opening of each "pa." This then gave a large outlet south as well as through the Yellow River bed itself. The result of the operation of these "pas" was serious flooding almost annually of much of the country to the south on both sides of the Grand Canal.

The existing channels from the Ming Dike south to the lakes, including the San River, and from them to the Yangtse River, are evidently artificial and indicate the execution of an immense amount of work for the purpose of passing safely as much as possible of the combined floods of the Huai and Yellow Rivers south to the Yangtse River.

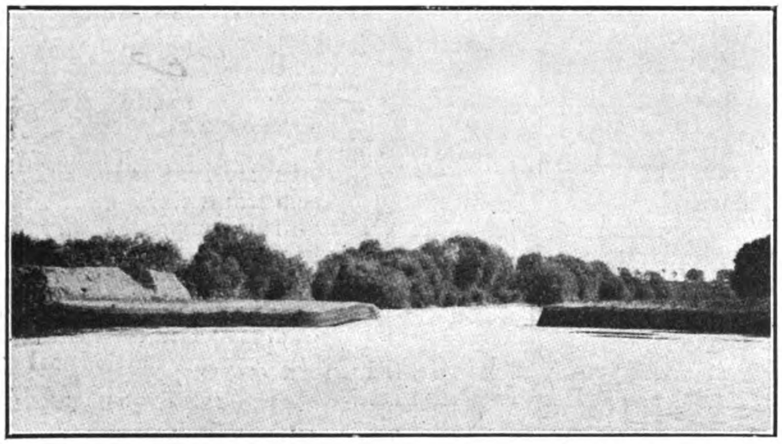
Removable dams or "pas" were built at the crossing of the Grand Canal and Yellow River to prevent the latter during high water connecting with the Hungtse Lake or the Grand Canal. During low water these dams were removed so that boats coming up the Grand Canal could cross the Yellow River and continue their journey north. It appears from history that these

dams were often washed out by the Yellow River during floods. In order to protect the east bank of the Grand Canal during such floods, five pas were built in such bank. Opening these pas gave relief to the high waters in the canal, but flooded an extensive and thickly populated area to the east between the canal and the sea.

In 1853 the Yellow River abandoned the channel that crossed the Grand Canal near Tsingkiangpu and left altogether the country south of the Shantung Peninsula and took a new course into the Gulf of Chihli.

The original conditions that affected the flow of the Huai River were materially changed by this and other visits of the Yellow River. The bed of Hungtse Lake was raised to an elevation of from thirty to thirty-three feet above sea-level, and the bed of the Huai was materially raised from Tsingkiangpu to the sea. This raised bed of the river and the dikes of the Grand Canal deprived the Huai of easy access to the sea to the east. The flood waters of the Huai, therefore, since this date have passed almost entirely through the lakes to the west of the Grand Canal and into the Yangtse River.

While the floods and consequent famine and distress in the basin of the lower Huai River and Hungtse Lake are very serious, the conditions were indescribably worse when the Yellow River connected with this area prior to 1853. The possibility of a similar connection between the Yellow River and the Huai basin which might destroy the effect of any conservancy work, caused the Board to conclude that this report would be markedly incomplete unless it included an investigation of the physical relations existing between the Huai and the Yellow River basins, with a view to forming an opinion as to the probability of the Yellow River again usurping the bed of the Huai.



Opening in East Bank of Grand Canal to Discharge Flood Waters.
Protected by revetment of reeds and earth.

The Yellow River and the Huai Drainage Area

With the exception of the extreme western tributaries, the Huai River drainage basin lies in the southern half of the great plain of eastern China. This plain occupies a roughly semicircular area approximately 600 miles in radius around the eastern end of the mountainous Shantung Peninsula as a center. This great plain is of delta origin, developed in a great bay or partially enclosed sea, which in prehistoric times formed a western extension and union of the present Gulf of Chihli and the Yellow Sea. This basin was gradually filled by the deposits brought down from the surrounding mountains by the numerous streams draining them, including the Yangtse Kiang, the Huang Ho (or Yellow River), and the western tributaries of the Huai.

The Yellow River has been more largely instrumental in the formation of the great plain of China and in the creation of the abnormal conditions that obtain in the plain than any other factor. These conditions are due to its comparatively recent occupation of its present lower course, to the unusual physical character of its sediment, and to the conditions that surround its flow from the mountains to the sea.

From the point where the Yellow River is deflected south by a spur of the Yinshan to the point where it debouches on the great plains of China, the course of the river is comparatively modern. Of this part of the river Prof. Bailey Willis (see Researches in China, vol. I, p. 234) says:

"If we attempt to follow it from its delta on the great plain of eastern China, we have, indeed, a channel which marks a continuous river, but we have not a valley of erosion which we may attribute to the stream. As we saw it at the Tung-kuan, and as it is described in its course from that point eastward, it is a stream occupying a depression produced by normal faulting. It has taken possession of a channel, but has not made one. In its long course from north to south, above the great elbow between the provinces of Shan-si and Shen-si, it flows much of the way in a canyon, and where not bounded by cliffs of rock it is shut in by walls of loess. Some portions of its channel appear to be antecedent to upwarps in the surface, and we are thus thrown back to an earlier date than that of the warping for the beginning of the river's course. But it appears, from descriptions given of the valley in works of travel or by the natives, that nowhere in its lower section is the river accompanied by that wide channel of an older valley which we would expect if it had long flowed in its course across the surface. * * *

"These characteristics of the river valley point to unusual youth, and apparently indicate an absence of an earlier history."

Prior to the development of the modern river, the ancient Yellow River occupied its upper course as far as the western border of Shansi. From this point it probably flowed through the present valley of the Heisen Ho into the chain of lakes which occupied the upper valleys of the Sankang Ho and the Yang Ho, and discharged through the present Yang Ho gorge. through the Hun Ho and the Pei Ho into the interior sea which has since become the great plain of China.

This is shown by the system of terraces of the upper Yellow River, which apparently extend from Ningsiafu in Kansu to Yenking Chow, north and west of Peking, and which occupied the valley of the chain of lakes mentioned.

"That this deposit was formed in fresh water is shown by the presence of the shells found in the terrace of the Te Hai. The uniform character of the loam in the different basins, and in all parts of the same basin, its great extent, and the fineness of the material of which it consists, are conditions which prove that it is not of local origin, or derived from the detritus of the neighboring shores, but that it was brought into the lakes by one or more large rivers which must have drained an area of great extent. Now throughout the region in question the only rivers are those of the Yang Ho and Sankang Ho basin, and, independently of the fact that these streams drain a very small area, the valley systems of these were almost entirely occupied by the lakes.

"Indeed the only direction from which a river of any importance could have come was from the west, in which case it could only have been the Hwang Ho (Yellow River)." (See Raphael Pumelly's "Geological Researches in China, Mongolia, and Japan," page 42.)

The later development of the great system of normal faults which extend through the mountains of Shansi for some 450 miles in a general northeasterly and southwesterly direction was accompanied by a general settlement toward the southern end of the fault block and a rising to the northern portion of Shansi near the Mongolian border. This movement either produced an upheaval and consequent obstruction in the eastern course of the ancient Yellow River near the western border of Shansi or accomplished the same result by opening a lower outlet channel to the south and east around the end of the fault block, and thus caused the Yellow River to radically change its point of entrance into the great plain of China.

Evidence shows that when the Yellow River first began to discharge its waters through the present outlet near Mengtsing, the land stood at an elevation of several hundred feet below its present altitude, and the silt brought down by the river was deposited in deep water, forming a normal delta adjacent to the mountains, and at the same time with other streams building up, with lighter material, the general sea bottom where the great plain of China now exists. Later in geological times diastrophic movements raised this sea bottom to or above the water surface, thus forming the base at least of the great plain. This upward movement of the sea bottom and of the Yellow River delta caused the degradation of the bed and delta of that stream and others flowing into this sea, as evidenced by the terrace systems in the valleys of the Yangtse and Yellow rivers, where they debouch from the mountains, referred to by Willis and Pumpelly. As this upward movement continued, the consequent degradation probably increased the deposits in the sea, thus increasing the slope of the sea bottom from the mountains to the present Gulf of Chihli and the Yellow Sea. When this upward movement caused the great plain of China to emerge from the sea, the

length of the Yellow River was materially increased and its action was then reversed. Instead of cutting its own bed and delta, it commenced to build them up so as to form a normal gradient for its greatly increased length. Before this could be done, man interposed and began to confine the stream by dikes.

The great disasters caused by this river in the past, which have given it the name of "China's Sorrow" and which are still a menace to the great plain of China, are largely the result of the fight which has been going on for centuries between the Yellow River, which is carrying on the development of a normal delta plain under abnormal conditions, and the Chinese people, who have attempted for four thousand years or more to confine this stream within limited bounds in order that they may cultivate as much as possible of the great plain of eastern China and support thereby a comparatively dense population.

Laws of Delta Growth

Normal deltas independently created by river systems are in general of a fan-shape and have sufficient gradient to assure discharge of the load of silt carried by their waters at ordinary stages into the sea. Only after such a gradient is established in the normal delta plain is the delta normally further extended. The channels are, when normal, sufficient for low water conditions, but the flood waters commonly overflow the lower delta area, and the contained silt forms natural dikes along the channel and slowly builds the adjoining plain. The gradient being sufficient for the transportation of silt, is not increased by the silting of the channel excepting as the delta is extended and it becomes necessary to maintain the gradient as the length of the stream increases. A normal stream meanders across the flood plain, cuts and fills its concave and convex bends, and as its length increases raises its bed and occasionally makes radical relocations of its lower channel.

The Normal Delta of the Yangtse

The Yangtse has largely created its own delta, which is normal and occupies the extreme southern portion of the great plain above described and the extension of such plains among the mountains and hills to the southward and eastward to the Bay of Hangchow. The Yangtse has at different times varied its course so as to occupy most of this delta plain, its course being to a considerable extent modified by its delta growth and the position of the intervening mountains.

Within historic times there has been a considerable extension of the Yangtse delta plain, and doubtless a corresponding rise in its upper delta bed, or at least in its water slope to overcome the losses of gradient caused by such extension.

The conditions of a normal delta are clearly shown in the delta of the Yangtse. Although its channel has been diked for centuries and in spite of a considerable extension of its mouth seaward, the river has not elevated its bed above the surrounding diked lands.

Delta Gradients

The low water elevation of the Yangtse at Hankow, 600 miles from the sea, is about 133 feet above mean sea-level, giving it a low-water slope of approximately .22 foot per mile. The silt carried by the water, while considerable, is small as compared with the silt content of the Yellow River. The normal delta gradient of any stream is necessarily a function of the quantity and quality of the silt carried by the stream and of the nature of the bed over which the stream flows. In the Yellow River not only is the silt carried excessive in quantity, but it is pervious in character and is deposited on a pervious substratum that permits extensive losses in the river volume by seepage and hence produces an unusual cause for silt deposition. The Yellow River, in its effort to build up a normal delta plain, has already raised its bed at the bridge of the Hankow-Peking Railway, about 400 miles from its mouth, to an elevation above mean sea level of about 400 feet, giving it a gradient of about one foot per mile. Even this gradient, apparently excessive when compared with the gradient of the Yangtse, is totally insufficient for the normal purposes of silt transportation to the sea. A river flowing over a plain having insufficient or only sufficient gradient for silt transportation purposes has no general tendency to deepen its bed. The Yellow River, in accordance with this law, has never excavated a channel in the great plain of China, but has meandered over the plain in its effort to create normal delta conditions and has formed channels only by the building up of flood plains adjacent to its lines of flow.

Dike or "Pa" at Tsiangkiapa. Proposed Location of Dam and Gates to Control Waters of Huai River.

The Condition of Unrestricted Floods of the Yellow River

The results from the unrestrained flow of the Yellow River may be understood and appreciated by its action during the times it has escaped from its diked captivity and wandered normally over the plains of China. About 1853 the river broke away from the bed that it occupied for over five hundred years, at a point about thirty miles northeast of Kaifengfu, and wandered unrestrained for many years to the northward of its former course, capturing the bed of the Ta-ch'ing ho and moving its mouth some 250 miles to the north of its former outlet and to the region to the north of the Shantung Mountains. About 1867 a portion of the area occupied by the unrestrained river was visited by Messrs. Ney Elias and H. G. Hollingworth.

Describing their impression of the Yellow River at the Nanshan, a small limestone hill forming the western extremity of the Tsinan Highlands, Mr. Elias says:

"The river at this point has no defined bed, but flows over a belt of country some ten or twelve miles in width, having merely the appearance of a flat, level district in a state of inundation; patches of ground, trees and even villages cropping up here and there; the Grand Canal traversing it in a general northwest direction until it reaches the northernmost channel of the river at Palimiso some fifteen miles west from the Nanshan. Along this fifteen miles of the canal the banks have been carried away in a number of places by the Yellow River breaking across them. The gaps are sometimes half a mile or more wide, and the current rushing through them almost obliterates the course of the canal, and renders the navigation upon it difficult. For dreariness and desolation no scene can exceed that which the Yellow River presents here. Everything natural and artificial is at the mercy of the muddy dun-colored waters, as they sweep on their course to the sea; a flood not likely to subside and a doubly mischievous one from the fact of its ever moving onwards with a swift current."

The work of the Yellow River, due to one of its breaks through the artificial dikes by which its course has been temporarily restrained, is described by Tyler as follows (see notes on the Hwang Ho or Yellow River, W. F. Tyler):

"Five years ago (in 1898) a breach occurred at Wang-chia-li-hang, some 40 li below Chi-nan, on the south bank, which devastated a large area of country and caused the terrible distress which resulted in the organization of relief work by foreigners. The effect of this flood I was able partly to examine while going down the Hsiao-ch'ing-ho, and afterwards by riding along the course of the torrent from where the breach occurred, I estimated that at least 100 square miles were turned into a sandy waste of almost absolute sterility, while over an area of 200 square miles a deposit of more or less sterility was laid. * * * At the few places where actual examination was possible the depth (of the deposit) was from 6 to 10 feet, and the statement of the natives was that it varied from 4 to 8 feet. The River Taotai (official in charge) concerned considers the average depth to have been about 5 feet. Now, if we adopt the depth of 5 feet, it is seen that the sand which was poured out of the river in a single flood was about 1/5 cubic mile (28,000,000,000 cubic feet)!"

Describing the last great change in the course of the Yellow River, Tyler says:

"In 1853 the Hwangho broke its dike near K'ai-feng, and about 270 li to eastward of the breach the defluent waters found the bed of the Ta-

ch'ing-ho, as if it had been specially prepared to conduct the Yellow waters for the remaining distance, of about 800 li, to the sea. The bed of the Ta-ch'ing-ho was at that time about 1 li wide, and was sunk in the plain to a depth of some 50 feet or so. This bed, to commence with, was more than sufficient to hold even the flood waters of the river; but the silting up must have commenced at once, and each year the flood waters must have come closer and closer to the top of the river bank.

"After a period of 30 years, *i. e*, in 1883, the flood waters began to overflow and gently flood the plain. In consequence of this, the Governor of Shantung constructed dikes on both sides of the river from Tung-s-hsien to the sea. These dikes are the present existing outer dikes of the river. Previous to this the dikes had gradually been continued down from Honan to Tung-s-hsien." * * *

"In the meantime the Hwangho gradually raised the plain between its embankments, until now (1903) the flood level is about 15 Chinese feet above the level of the original plain—that is to say, the flood level has risen 15 feet in 20 years, *i. e.*, ¾ foot a year."

Historical evidence indicates that the Yellow River has been diked for about four thousand years and has in no case ever created on any course a gradient sufficient for normal silt transportation. This diking was therefore begun under conditions radically different from those of rivers flowing through deltas completed normally by their own silt deposits. On account of the necessities of a thickly populated country the wandering branches of the Yellow River flowing unrestrained across the flat plain of China were early confined to a more narrow range by an extensive dike system. These dikes were built locally and insecurely at first, but were gradually strengthened, systematized and improved until they finally developed into an extensive dike system under the somewhat experienced and systematic care of the local and national authorities. In its confined channel, between primitive dikes, the Yellow River has been building up a restricted delta and endeavoring to create a gradient commensurate with its needs. This has involved the raising of both its bed and the limited flood plain within the restricted dikes until they are frequently high above the surrounding level of the great Chinese plain. As the heights of its bed and flood plain increased within the restricted area the river frequently broke through its confining dikes, and while sometimes recaptured and returned to its artificial limits, often permanently threw off its bonds, devastated the country and wandered uncontrolled over a new portion of the plain, carrying on its normal work of delta building in a wide track until again confined in a new and restricted course to enable the Chinese people to reclaim temporarily the lands necessary for their sustenance.

Danger to Huai River Conservancy from Yellow River

The only points at which a break in the Yellow River is likely to harm the Huai River improvements would be between the old river bed and the loess hills near the Hankow-Peking railway bridge. East of this the double-dike system of the old river bed lies between it and the district and is a fairly effective safeguard against such a disaster.

West of the old river bed there has evidently been a degradation of the bed of the present river, caused by an increased gradient in this part of the channel, due to the breaking of the channel through the north dike into the lower land at the time the river took its present course. This drop in the bed has not yet been recovered. This is shown by the facts that the surface of the river at ordinary stage is below the bed of its ancient channel and that the river above the break does not at present rise to its former flood plain even at times of maximum flood, and its safe control through this section, with reasonable care—which must for safety be fully assured—is not likely to become a serious problem within the time limits of any probable issue of bonds for conservancy purposes.

The Effect of Imperfect Drainage and Rainfall

Owing mainly to the flat topography, local drainage channels throughout the conservancy area are in general very poorly developed, and during dry weather are frequently hardly discernible, as they occupy depressions that in general are but a few feet below the level of the surrounding country and require but a few feet of water to bring about flood conditions over extensive areas. The drainage is so defective as not to offer relief for even the average conditions of rainfall that occur in this region. The torrential character of the rainfall that frequently occurs in this area necessarily results in flood conditions which cause great losses and serious famines in the affected areas. Thousands of lives have been lost by drowning and much property has been destroyed. Even greater loss of life has ensued from starvation in the resulting famines, and millions have been spent even to partially mitigate the distress occasioned. While the average rainfall is about 36 inches per annum, the minimum rainfall locally is not more than one-third of this amount, and the maximum may be quite 80 inches. A local rainfall of 25 inches fell in 48 hours ten miles north of Pengpu in August, 1910. Fortunately such rainfalls are unusual, but rainfalls of from 4 to 8 inches in from one to three days are quite common and result in floods more or less serious according to the condition and extent of area over which they occur.

In July, 1914, during the early part of the visit of the Board to this area, the country was suffering from a drought which had reduced the crop production from three-fourths to one-half the normal amount; in July and August vast numbers of grasshoppers, favored by the dry season, utterly destroyed certain crops; and in September late rains covered much of the country with overflow, destroyed much of the remainder of the crops, and afforded a most unfortunate climax to the afflictions of this hard-working community that even at the best is apparently unable to secure more than a bare living from the soil.

It is apparent from the imperfect drainage conditions throughout this country that any general system of main channel improvements can have but limited effect on the local drainage systems of the entire basin, but that any such system must be gradually extended and adapted to the local conditions. Such extensions, to be properly planned, require a vast amount of detailed information not now available regarding the local topographic and hydrographic conditions.

PROJECTS

Yi and Shu and Sze

The Sze is an overflow channel from the Weishan Lake into the Grand Canal. Its discharge depends almost entirely upon the stage of that lake, concerning which the Board has no information.

A high flood in the Yi was measured at Nanchingyih by one of the Board's survey parties on September 4, 1914, and found to be 109,000 cubic feet per second. While the General Map does not show other channels, it was ascertained by this survey party that a material part of the flood waters of the Yi left the main channel at several points north of Nanchingyih, flowing southwest in channels and across country to the Grand Canal. Judging from the survey party's description of the above situation, the flood discharge of the Yi may reach or exceed 140,000 cubic feet per second.

A large part of the flood water of the Yi follows the Grand Canal, finding outlets into the Liutang and the Yen Canal. Some passes into the Hungtse Lake and on to the Yangtse River. Some passes through the sluice locks at Tsingkiangpu and on to the Yangtse, producing floods in the Grand Canal.

No opportunity presented itself for measuring the flood discharge of the Shu. A comparison of its watershed with that of the Yi leads to the belief that its flood discharge may be approximately two-thirds that of the Yi, the physical conditions being quite similar, and that the total volume of flood waters that has no adequate channel to the sea and combines in the flat country west of the lower Yen Canal may be 225,000 cubic feet per second or more.

The problems involved in attempting to control the floods of the Yi, Shu and Sze are many, and the Board finds that the data available is not sufficient to enable it to formulate a project. Definite information is needed as to flood discharges. An accurate topographical map showing half-meter contours of all the country north of Tsingkiangpu between the Yen Canal and the Grand Canal is an essential. This map should extend north until it includes all connections between the branches of the Yi and the Grand Canal and until it develops all feasible routes by which the Yi River could be diverted into the Shu. In making this map accurate information should be obtained as to the extent

of the flooded area and the benefits that would accrue from the control of the floods of these rivers.

In general it would seem advisable:

1st. To join the Yi and the Shu as far north as practicable in one capacious, strongly leveed channel and to pass their combined floods to the sea by the shortest, most feasible route.

2d. That locks and dams be built in the Grand Canal and the flood waters of the Yi be completely diverted from such canal.

3d. The cost of such a project would be great and the benefits unascertainable with present information.

Huai River Project

The Huai River drains an area of about 50,000 square miles above Pengpu. The surveys show that its valley slopes very gently to the sea; that the average fall at high water from Pengpu to the sea via the Hungtse Lake through the bed of the old Yellow River (a distance of 256 miles) is 3.28 inches per mile.

Assuming the Huai River turned directly south at Tsangkiapa and separated from the bed of Hungtse Lake by a dam, the average slope from Pengpu to the Yangtse River when the latter is at extreme flood (a distance of 213 miles) is 2.98 inches per mile. The influence of the Paoying and Kaoyu lakes is such, however, as to make the grade available for the narrower channels greater by this route than along the Yellow River route.

All of the heretofore proposed projects for improving the flood conditions in the Huai River, of which the Board has knowledge, contemplate either sending all the water east to the sea, preferably by the bed of the old Yellow River, or a portion of it to the sea by that route and the remainder south to the Yangtse through the lakes to the west of the canal.

While the Board has not had opportunity to make a direct measurement of the maximum flood discharge of the Huai River, it has had measured the discharge of that stream at Pengpu at stages between low water and an eighteen-foot stage. The low-water discharge was 4,000 cubic feet per second, and the discharge with a rise of eighteen feet was 84,815 cubic feet per second. The river sometimes rises ten feet above that stage, thus making variations between extreme high and low water about 28 feet. The maximum flood discharge of the Huai at Pengpu, estimated from measurements taken and from calculations based upon known high-water marks at Pengpu and a point eight miles up stream, plus the roughly estimated discharge of the small streams entering the Hungtse Lake and the Huai below Pengpu, leads the Board to conclude that the maximum of water entering the Hungtse Lake is at least amount 200,000 cubic feet per second.

The following methods of so disposing of this water as to reduce floods have been proposed:

Project No. I

For this project it has been proposed to send half the water down the old Yellow River bed to the sea and half south to the Yangtse. To improve flood conditions around Hungtse Lake and up the Huai, it would be necessary to so arrange discharge capacities of outlet channels as to reduce flood heights in Hungtse Lake. This height, as determined by the Conservancy Bureau, is about fourteen and a half meters above sea-level. To materially improve flood conditions, Hungtse Lake should not be allowed to rise above a 13-meter stage.

With a lake-level at 13 meters, it is estimated that a channel crossing the Grand Canal and extending down the old Yellow River bed to the sea capable of discharging 100,000 cubic feet per second would have the following approximate dimensions:

1,000 feet wide, 23 feet deep, with side slopes 1½ to 1, and would require the excavation of 920,000,000 cubic yards of material.

With Hungtse Lake at 13 meters and the Yangtse River at extreme flood stage (19 feet on the Chinkiang gage), a channel from Tsiangkiapa to and through the lakes to the south and thence to the Yangtse River capable of discharging 100,000 cubic feet per second without increasing flood heights in the Paoying and Kaoyu lakes to the west of the Grand Canal would involve the excavation of 27,000,000 cubic yards of material, making the total yardage of this project 947,000,000.

The cheapest route to pass 100,000 cubic feet per second from Hungtse Lake east to the sea would be via the Yen Canal and the Liutang River. Such a channel would involve the excavation of 589,000,000 cubic yards of material. Adding 27,000,000 cubic yards for the southern channel, there results a total of 616,000,000 cubic yards.

The results of this project would be as follows:

a. No appreciable decrease in the height of the sudden floods of the Huai River above Pengpu.

b. A decrease in the length of time that the river would remain in flood.

c. A lessening of the height of floods due to long-continued rains, when such conditions would, under present conditions, cause the Hungtse Lake to rise above the 13-meter stage.

d. No land reclaimed; benefits indefinite.

If this project be varied and the channel from Tsiangkiapa to the Yangtse River be made by enlarging existing channels along the western edge of the lake region, it would be practicable to drain the beds of Paoyang and Kaoyu lakes during the winter and spring months, when the Yangtse is low, and such lands be made available for wheat. This would largely increase the total yardage of Project No. 1.

Project No. II

This project proposed to send the flood waters to the same destinations; one-half to the east to the sea and one-half to the south to the Yangtse. That portion of the water destined for the sea to the east was to be confined to a channel across the bed of the Hungtse Lake, parallel and close to the Ming Dike. This channel was to be part in excavation and part formed by dikes. Imposing the same conditions as to height of Hungtse Lake, the yardage involved in making a channel capable of carrying 100,000 cubic feet per second to the sea would materially exceed the corresponding estimate in Project I. The cost of the other part of the project would be the same as in Project I; and the results would be essentially the same as in Project I, since the Hungtse Lake cannot be reclaimed by either.

Project No. III

It has been proposed for this project to send all the water to the sea through the old Yellow River bed, reclaiming the beds of Paoying and Kaoyu lakes west of the Grand Canal.

With the Hungtse Lake at 13 meters, it is estimated that it would require a channel in the old Yellow River bed approximately 2,000 feet wide and 23 feet deep to carry 200,000 cubic feet per second to the sea, and would involve the excavation of 1,880,000,000 cubic yards of material, the channel slope from the Grand Canal to the sea being 3.17 inches per mile.

The beds of the lakes in question are below the extreme flood heights of the Yangtse. If such beds were thoroughly drained, a wheat crop could generally be grown on such lands. With dikes to hold back the flood waters of the River Yangtse during the summer months, there would be no drainage for this low, flat land, and with the excessive rains common during June, July, August, and September, it is not thought that crops could be grown during that part of the year.

If Project III be varied by sending all the water to the sea by the Yen Canal and Liutang River, it would involve the excavation of about 1,080,000,000 cubic yards of material.

None of the plans described above make the reclamation of the bed of Hungtse Lake practicable.

The Board after mature consideration finds itself unable to recommend any of these projects.

Project Recommended by the Board

The Board is of the opinion that it is best not to attempt to divide the waters of the Huai, and that all such waters should go, as they have for the last sixty years, into the Yangtse River near Chinkiang; that such waters should be diverted into Paoying and Kaoyu lakes in such a way as to make entirely feasible the reclamation of the bed of Hungtse Lake. This reclamation of the Hungtse Lake bed makes it practicable to construct a channel across the same with high dikes, through which can be safely passed to Paoying Lake the waters of the Sui and the drainage

water from a large part of the territory annually flooded, bounded by Hungtse Lake, the old Yellow River bed, the Tientsin-Pukow Railway, and the Huai River below Pengpu.

The Board caused an investigation to be made of the feasibility and cost of diverting the Huai River to Paoying Lake on two alternative routes:

First, by building a dike across its mouth just below Kweishan, and cutting a channel across the peninsula from a point above Kweishan to Tsiangkiapa.

Second, by building a suitable dike from the left bank of the mouth of the Huai River opposite Kweishan to the village of Tsiangkiapa about three kilometers from the shore line.

It was disclosed by this investigation that the former plan would involve a far greater quantity of earth excavation than the latter, and in addition thereto a large quantity of rock excavation. The cost would be so great as to make that route practically prohibitive.

By the plan recommended it is proposed to build a suitable dike on the line indicated on the drawing and described above, from the left bank of the mouth of the Huai River opposite Kweishan, to the village of Tsiangkiapa, roughly parallel to the shore of the Laotzeshan Peninsula, and everywhere at least three kilometers therefrom. This will form with the shore line a channel for the diversion of the Huai River from Hungtse Lake, which with the proposed excavation will be capable of carrying about 200,000 cubic feet of water per second at lake stage of 13 meters, and disposing of ordinary floods of 100,000 cubic feet per second without permitting the water at Kweishan to rise more than 12 meters above sea-level.

With a slope of .00005 between Laotseshan and Tsiangkiapa, the following table shows roughly the discharge capacity of this channel at various elevations of the Huai River at Kweishan:

Stages of river.	Discharge in cubic feet per second.
11 meters above sea-level	30,000
12 meters above sea-level	100,000
13 meters above sea-level	200,000
14 meters above sea-level	340,000

It is proposed to build regulating works at the Tsiangkiapa outlet, with a capacity of 200,000 cubic feet per second, with water surface just above the works 12 meters above sea-level; to provide a channel below Tsiangkiapa with a discharge capacity of 200,000 cubic feet per second to Paoying Lake, with the lake at a stage 8 meters above sea-level; and channels from that lake to the Yangtse having the same capacity, with the river at 19 feet on the Chinkiang gage.

It is proposed to provide the unwatered bed of Hungtse Lake with an extensive network of canals and laterals, with beds about 3 meters below the surface of the ground. The outlets of the principal drains would be provided with controlling works, so that the channels would serve for drainage when left open, and by closing them the canals would be filled from the Huai River and used for irrigation by means of moderate lifts varying from 1 foot to 6 or 7 feet, according to their distance from the source of supply. This system would also be available for navigation, and would connect with the Grand Canal and thus make available the waters of the Huai River for navigation in that canal, and for irrigation east of it when needed.

The enlarged channel capacity to be provided between the Kaoyu Lake and the Yangtse would in dry weather empty that lake, and, unless prevented, so deplete the waters of the Grand Canal as to destroy navigation and deprive the lands east of it of irrigation water. To prevent this, and to improve navigation it is proposed to build a lift lock in the Grand Canal near the town of Shaopo, with a total lift under extreme conditions of about 4 meters, and a channel with lock and regulating works connecting the Grand Canal above this lock with the channel leading to Sinnemiao. This will prevent waste of water in times of scarcity, insure a stable irrigation supply to the eastward, and greatly improve the navigation of the Grand Canal, which is now seriously interrupted in low-water periods. It is also proposed to dredge the Grand Canal from its lock southward to a bottom elevation of minus 4 feet on the Chinkiang gage.

Just above Tsingkiangpu it is also proposed to build a lift lock of 4 meters lift capacity, so located as to eliminate from the main canal all the sluice-locks above that town and also the great curves that occur in the canal in that vicinity. This will save distance, economize water, make navigation much safer and feasible at all stages of water, and improve the navigable capacity of the canal at that point and for some distance above. It is proposed to provide a regulated flood channel from the canal above this lock to Paoying Lake to care for the same proportion of the flood-waters from the upper Grand Canal as have formerly passed down the Grand Canal and into the Hungtse Lake. No water would be allowed to flow from this point down the Grand Canal except that used for lockage. This would thoroughly protect the country east of the Grand Canal and south of the old Yellow River bed from all floods except those due to local rainfall, providing the existing east dike of the Grand Canal be kept in good repair.

It is proposed also to connect the valley of the Sui with Paoying Lake by a large drainage channel with a normal capacity of 50,000 cubic feet per second. This channel would cross the reclaimed lands of Hungtse Lake and would be separated from them by high dikes. Branch dikes from these, connecting with high ground to the north and south, would be provided to protect from overflow the reclaimed lands of Hungtse Lake. Various branches and laterals connecting with the main drain would be necessary to properly drain the lands, but the topographic information concerning the country affected is insufficient to permit the location of these drains at present, and detailed quantities and estimates must await the preparation of a good topographic map of the region. This system of drainage would be of great benefit in relieving at least the lands between the Sui and the old Yellow River bed from flood conditions, and as it would be built for their benefit they would repay the cost. The area to be benefited is estimated at 10,200,000 mow, or 1,700,000 acres. To the cost of the main channel should be added the cost of the local connections, which could probably be provided by local effort, but should be constructed under competent direction and in accordance with approved plans.

It must not be expected, however, that these works will entirely prevent the flooding of the lands benefited. When 5 to 25 inches of rain fall in one storm upon plains as flat as these, no practicable works of man can prevent the submergence of the land. The most that can be done is to provide large and free outlets, so that the waters may run off quickly before they have killed growing crops. This will curtail both the magnitude and duration of the floods, and, with reasonable local care in making connections with the drains and in protecting harvested crops, the damage would be largely avoided.

General Benefits from the Project

The region to be chiefly benefited is the area bounded on the north by the old bed of the Yellow River, on the east by this old bed and the Ming Dike; on the south by the southern margin of Hungtse Lake and the Huai River; and on the west by the Tientsin-Pukow Railway. The upper Huai River and its tributary valleys will be but slightly affected by the proposed works.

Substantial benefits will also accrue to the agricultural land east of the Grand Canal, which was this year and is frequently inundated by the excess water from the Grand Canal, and is as often short of irrigation water. Both these conditions will be removed by the proposed works, and all the country served by the Grand Canal will benefit by the improved navigation.

The lands to be directly benefited by this project may be divided into 5 districts, on the basis of the character, amount and cost of the said benefits.

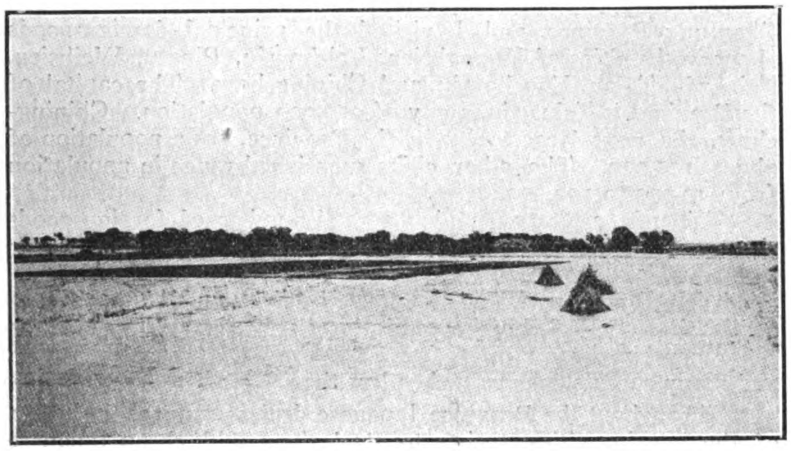
District No. 1.—Lands which will be reclaimed and irrigated. This includes the greater portion of the bed of Hungtse Lake, and comprises an area of about 350,000 acres, or 2,100,000 mow, valued at at least $75.00 per acre.

District No. 2.—Lands which will be reclaimed, but not irrigated. This includes the northeastern portion of Hungtse Lake, an area of about 36,000 acres, or 216,000 mow, valued at at least $50.00 per acre.

District No. 3.—Lands around Hungtse Lake which have been mostly cultivated but subject to frequent inundations, and

which will be protected from overflow and provided with drainage channels. Estimated area 300,000 acres, or 1,800,000 mow; benefited at least to the extent of $15.00 per acre.

District No. 4.—Lands heretofore cultivated which will be provided with main drainage channels for the escape of all flood waters. This class includes the area bounded on the north by the old bed of the Yellow River, on the east by the old bed of the Yellow River, Hungtse Lake and District No. 3; on the south by the Huai River, and on the west by the Tientsin-Pukow Railway, with the exception of a portion of the southern part, which is too low to be relieved by these works. The benefited area in this district is estimated from the best available information at 1,700,000 acres, or 10,200,000 mow, and would be benefited at least to the extent of $4.00 per acre.



Flood conditions along Tientsin-Pukow Railway.

District No. 5.—Lands benefited by the regulation of the Grand Canal, preventing both overflow therefrom and water shortage therein for irrigation. This includes a large portion of the lands east of the Grand Canal and south of the old bed of the Yellow River. The area is roughly estimated at 5,000,000 acres, or 30,000,000 mow, and the entire area would be benefited to the extent of at least $10,000,000.

In addition to the direct benefits, there will be various indirect benefits, of which the most important is the improvement of navigation in the Grand Canal, in consideration of which it is proposed to collect equitable charges for the use of the locks to be provided.

Revenues from the Grand Canal

In so far as the Board could determine, no record is kept of the tonnage on the Grand Canal, and the revenues are so complicated by likin* charges as to be indeterminate. This canal within the conservancy area is the principal transportation route for a thickly-populated country about 150 miles wide and 200 miles long. The tonnage at present on this waterway is large, and with the improvements contemplated could be transported with less than half the boats at present employed, thus decreasing by at least half, the cost of such transportation and leaving boats available for transporting the increased commerce that will result from the improved flood conditions and the cultivation of reclaimed lands. This saving in transportation cost should be collected in the form of tolls until the bonds issued are redeemed.

There should be in the agreement with China a definite statement as to the maximum amount of likin or other charges the Chinese Government will make on boats or cargo while in this canal or other canals built in the prosecution of this work. If the likin and other charges made do not exceed the cost of the transit pass over other transportation routes the revenues that could properly be collected for passage through the canals in question would be relatively large. It is believed that the net income would not be less than $225,000 per annum. The contract should clearly state that the banking houses shall have the right to collect tolls for the passage of boats through the canals and locks built in the prosecution of this conservancy work until the bonds issued for such work are redeemed.

*"Likin" is an internal tax levied upon the transportation of goods.

Taxes on Reclaimed and Benefited Lands

The Chinese Government should agree to apply the entire tax on the reclaimed land and any increase in taxation on the benefited land to the payment of the bond interest and principal. This should net not less than the following amounts:

Reclaimed land, 386,000 acres, at $1.00	$386,000
Benefited land, 7,000,000 acres, at $.25	1,750,000
Total	$2,136,000

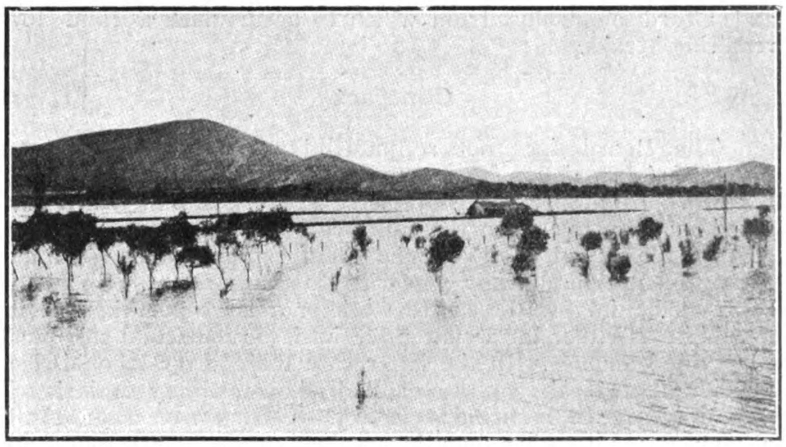
Summary of Estimated Returns.

Value of reclaimed lands in Districts 1 and 2,	$27,050,000
Value of benefits in District No. 3,	4,500,000
Value of benefits in District No. 4,	6,800,000
Value of benefits in District No. 5,	10,000,000
	$48,350,000

There should be received annually at the end of the six-year period of construction:

From the revenues of the Grand Canal and other canals in the area a net return of	$225,000
From taxes on lands	2,136,000
	$2,361,000

The above estimated prices for reclaimed land and values of benefits to be assessed are based on limited information both as to areas, which have been measured from the best available maps, and conditions which the Board has not had the opportunity to investigate in detail. The estimates are believed, however, to be conservative, and may on further investigation be increased. Further extensive surveys and investigation must be made to justly fix the areas which will be benefited and that should be assessed and the actual amount of benefits which will be derived. Unless essentially such benefits can be collected the project cannot be made to pay for itself. As a further preliminary to financing the project, the method of assessment and collection must be elaborated and the Chinese Government must agree to collect specific benefits at least equal to those estimated and to meet any deficiency which cannot be so collected.



Scene in Flooded Area in Kiangsu Province.

The benefits will accrue on the completion of the work at the end of the six-year period; but the manner and terms on which the land will be sold and the disposition of the funds received from such sale and those collected as benefits, in such a way that, with the fixed revenues, they will meet the interest on the bonds and pay them when due, are questions which the Board will not attempt to discuss. The term of the bonds should not be greater than the time required for construction, plus the period in which the reclaimed land will be paid for and the benefits collected.

Cost of Project

The works recommended are estimated to cost about $30,000,000, U. S. currency. They can be economically completed within about six years after the beginning of construction, provided funds are available as needed, and the work is

vigorously prosecuted. If the bonds issued bear 5 per cent interest, and are sold at ninety cents on the dollar, and if 3 per cent can be secured on unexpended balances, the total issue to cover discount and interest during a six-year construction period will amount to $45,000,000.

On the basis of the benefits estimated above and the returns from canal tolls and the taxes suggested it is believed that a satisfactory method for financing the project can be devised.

Operation and Maintenance

The locks recommended will require attendants to operate them and will need care and occasional repairs, all of which can be paid for by a portion of the receipts derived from their use. The estimates of the net revenues therefrom are made with this policy in view.

The controlling works in the canals will also require similar attendants, but as these occur only at two points separate from locks, the extra cost will be small. The canals themselves, although of enormous length, do not have the complications often found in canal systems, such as side-hill locations, sharp curves or high velocities, and they are mostly too deep to permit aquatic plants to grow on their bottoms. The clearing of weeds from their banks, so expensive in America, is obviated by the practice of the Chinese people of gathering all such vegetation for forage or fuel as soon as it is available.

The dikes must be patrolled, especially just before and during the flood season, to guard against the attacks of burrowing animals and other dangers, since a break at flood time would be very serious.

Some provision for these expenses should be made in the contract with China. Probably the simple duties of caring for the small channels could be assumed by the riparian owners of land under contractual arrangement with them when the lands are sold, reserving suitable powers for the enforcement thereof, and the cost of the other work should be also provided for.

No precedents are available from which to estimate the cost of such work in China, but it is believed that an allowance of $200,000 per year would cover the necessary regular outlay and afford a surplus from which to accumulate a fund for repairing breaks.

Contract

The Board does not recommend a percentage contract. Much of the work can be more economically done by contracts for work of a specified character. There is no incentive for speed or economy when the contractor receives a specified per cent of the actual cost, and the Chief Engineer under such an arrangement is practically powerless to secure either. Should a contract be let for the entire work or a large part thereof, it should be let either on a unit price basis or for actual cost plus a specified amount. In the latter case the contract should also provide that if the contractor shall show inability or lack of due diligence in securing economy of construction or shall attempt to secure other than the specified profit the contract shall be nullified.

Supervision

The Board is of the opinion that the Chief Engineer should have complete authority as to plans of work and methods of doing same, but that after he has completed plans in sufficient detail for work to actually commence, such plans should be passed upon by a Board of Engineers, this board to be named by the banking houses which may finance the work. The work is too large and important and an error of judgment of too great consequence to be left entirely to the judgment of one man.

Thereafter an annual inspection and report should be made by an engineer or Board of Engineers acting in an advisory capacity to the Chief Engineer, the selection of such engineer or engineers to be made jointly by the banking houses and the Chief Engineer. In addition, the Chief Engineer should have the privilege at any time to ask the advice of one or more engineers expert in the particular problems when their importance seems to him to warrant such action.

Wm. L. Sibert.
Daniel W. Mead.
Arthur P. Davis.

Major General Geo. W. Davis, U. S. A., Ret.,
Chairman of the Central Committee,
American National Red Cross, Washington, D.C.

FOREIGN-GOODS SHOPS IN SHANTUNG CITIES

BY COMMERCIAL ATTACHE JULEAN H. ARNOLD

A recent tour of the Chefoo consular district embraced most of Shantung Province, and I visited the principal foreign-goods shops in the cities of Huanghsien, Laichowfu, Pingtu, Weihsien, Tsinanfu, Taian, Yenchowfu, and Chiningchow. The capital of the Province is Tsinanfu, a city of 250,000 population. Chiningchow, the next largest city in the Province, has a population of about 125,000. The other cities mentioned range in population from 40,000 to 100,000.

Tsinanfu, a treaty port, has a good number of foreign-goods shops. Chiningchow, on the Grand Canal, has a half dozen stores which retail foreign goods. Huanghsien, Laichowfu, Weihsien, Pingtu, and Yenchowfu each have two to six foreign-goods shops. Probably none of the foreign-goods shops in the cities mentioned carry more than $1,000 to $2,000 worth of stock, and many carry stocks valued at less than $1,000.

Throughout the Province Japanese dealers canvass the shops of the interior cities, trying to stock them with cheap Japanese wares. The greatest Japanese business now is supplying cheap foreign headgear—hats and caps. Cheap Japanese toothbrushes, tooth powders, patent medicines, toilet articles, perfumes, soaps, etc., are found in nearly all the so-called foreign-goods shops.

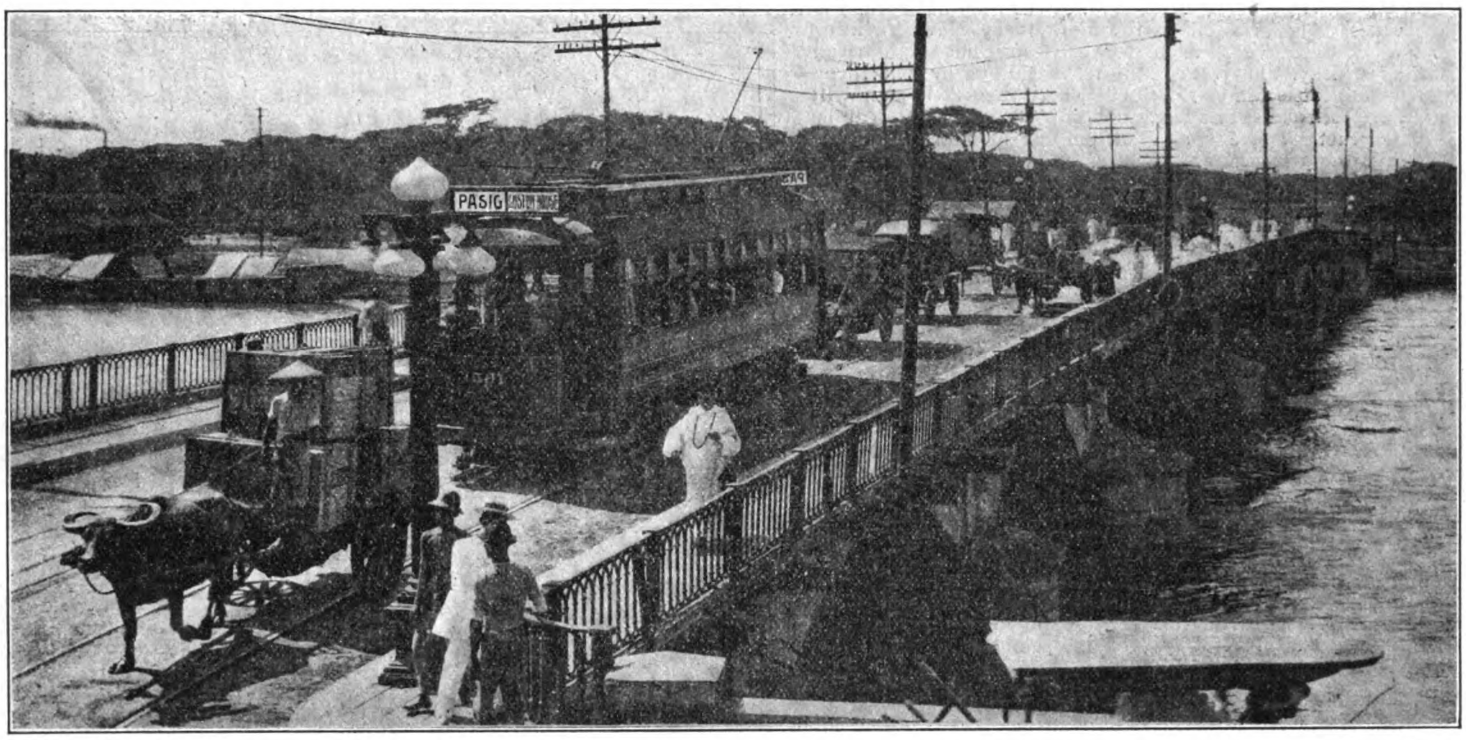
Japanese patent medicines are evidently sold in enormous quantities, judging by the amount of advertising done. Cheap enameled kerosene stoves, with combination enameled boilers of German and Austrian make, are selling in numbers throughout the Province. One foreign product sold in increasingly large quantities each year is condensed milk. One American manufacturer of underwear, whose goods are advertised in Chinese throughout Shantung, does a large business. With the advent of foreign clothing the sales of foreign apparel, of sewing machines, buttons, socks, collars, hats, and caps have increased enormously.

Foreign soaps, candles, dyes, lamps, hardware, needles, pins, and buttons are carried in substantial quantities in the foreign-goods shops. Foreign tinned biscuits and tinned and bottled candies are also finding a good market. Cheap foreign stationery and school supplies begin to appear throughout the Province and cheap gramophones, mostly of German and Japanese manufacture, are selling in considerable numbers.

In practically all the cities of over 40,000 inhabitants there are one or more foreign sewing-machine agencies, generally stores neatly fitted up with show and demonstration rooms. Cheap watches, clocks, and jewelry exist in all the general foreign-goods shops. The Chinese are fond of bright, showy things, so that the more decorative and ornamented they appear the better sale they command.

Foreign manufacturers are learning to furnish their wares to the Chinese with labels, directions, and advertising matter in the Chinese language, which after all is the only successful way of reaching this market. Many foreign concerns have inaugurated extensive advertising campaigns in Chinese throughout the interior cities. Cigarettes, candles, patent medicines, condensed milks, sewing machines, gramophones, underwear, beer, biscuits, anti-opium pills, dyes, kerosene, and soaps are extensively advertised in the Chinese language throughout the cities of the Province.

A favorable attitude has been produced in the minds of the people toward things foreign, and those foreign dealers who will put up their goods to meet the Chinese fancy, and put them up under Chinese labels and with advertising matter and directions for use in Chinese will find a constantly increasing market for their goods among the Chinese people.



Courtesy Bureau of Public Works

TRANSPORTATION ACROSS THE BRIDGE OF SPAIN

The flood of September 2, 1914, wrecked the center pier of this bridge, blocking both the water and the land transportation at this point. A new bridge is now being completed and is open for traffic.

TRANSPORTATION METHODS IN THE PHILIPPINES

By O. Garfield Jones.

IN THE PHILIPPINE CRAFTSMAN

Unthinking people sneer at certain methods of transportation as being "out of date." The chauffeur grins at the cochero as the auto shoots past the slow-moving carromata. A half hour later the cochero returns the grin as his sturdy little pony passes the stranded auto with the sweating, swearing chauffeur flat on his back under the machine. The cochero puts on a superior smile as he overtakes the carabao and sled, but when he reaches the bad road a little farther on he loses the superior attitude and waits meekly for the carabao and sled to haul him through the mud.

There are four factors in every transportation problem, and the determination of what is and what is not "up-to-date transportation" must always depend upon these four factors taken together. The first is the kind of goods to be transported, the second is the amount of goods to be transported, the third is the distance that the goods must be carried, and the fourth is the kind of surface over which the carrying must be done.

Suppose that during the wet season a certain farmer has a quantity of rice in the center of a rice paddy country that is devoid of roads. The only way to get that rice to market is to put it on the back of a cargador, on the back of a carabao, or in a carabao sled. Nothing but a cloven-hoofed animal can pack a load through deep mud day after day and keep in health. Man himself cannot do it; the suction on his feet is too great. If the cargador can compete with the carabao under these circumstances, it is because the cargador can pick his way and avoid the worst places. In the United States where horses and automobiles are everywhere, there are still some communities where oxen must be used in the wet season for heavy pulling, such as logging over mud roads. The cloven-hoofed draft animal will not soon disappear in a rice country having a hundred inches of rainfall.

The cargador is a primitive means of transportation that is not now and probably never will be out of date. If a man in New York City wants to send a trunk to a barrio in Benguet, the steamship will carry it most of the distance, the railroad will take it a part of the way, the auto truck and the carabao cart may haul it a few miles, but the first and last steps in the journey will be on the shoulders of a cargador. With all the modern means of transportation available in New York City, the only economic method of getting a single trunk from a residence to a cart or auto truck is for a man to carry it on his back.

This illustration shows how the four factors of transportation above mentioned determine the means to be employed. First, the size and shape of the trunk are such that a pipe or trough cannot be used economically to slide it to the cart as is done with coal and grain. Secondly, there is only one trunk; consequently a special kind of conveyer for sliding out trunks cannot be economically used. Thirdly, the distance of transportation from the second story of the house to the cart at the front door is too short to warrant the use of any method of transportation that involves extra expense. Fourthly, the surface over which the trunk has to be transported is a polished floor and a stairway. Cargador transportation is the only means that is satisfactory for this surface.

Thus, where there are only a few pieces of freight to be transported, the surface irregular, and the distance short, the method of transportation is easy to determine. But when the amount to be carried is large, the surface factor is not decisive, because the surface may be changed. If the man in New York has 10,000 trunks to ship, he will save money by building a slide from the second floor of the house to the truck so that one man at the top to push the trunks on to the slide and one man at the bottom to arrange them on the truck can load trunks faster than six men can carry them down the stairs on their backs. Likewise, if the Filipino farmer has 10,000 cavans of rice in the center of the above-mentioned rice paddy region, he will save money by digging a little canal from his granary to the river, or by building a firm road of some sort from his granary to the main road, so that he can haul twice as large a load each trip the carabao makes.

The farmers of Jaro in Leyte Province used to pay Pesos 23 to have 4 piculs of hemp hauled by carabao cart to Carigara and 4 piculs of rice hauled back to Jaro. A first-class road was built connecting these two towns in 1912. Now a carabao cart makes the round trip for P.3, carrying 10 piculs each way. With the poor road the cost of hauling was practically P.3 per picul. The good road has reduced the cost to 15 centavos a picul, a reduction of 95 per cent.*

The quantity of freight to be hauled helps to determine the kind of surface over which it will be carried. The marvelous growth of railroads in the Mississippi Valley of the United States is an illustration of this principle. There were millions of bushels of wheat and corn there to be hauled, and the cost of building railroads, great as it was, was small as compared with the money the farmers were willing to pay for the transportation of their grain.

The question naturally arises as to whether the converse of the above proposition is true, viz, Does the ease of transportation determine the amount of goods to be hauled? The answer is that it does not do so immediately, but it does in the long run. In the early history of the United States the

* Picul=139 pounds. Peso=50 cents U. S. Cy.

farmers of western Pennsylvania made all of their surplus corn into whisky, because transportation to the markets at New York or Philadelphia was too expensive for anything but high-priced products like whisky. There are still large valleys in the Rocky Mountains where cattle can be raised but where the cattle man will not go until the railroad comes near enough so that the cattle can be shipped to market. There are municipalities in the Philippines where there are no stores or markets and where the people only expect to raise enough food for their own family consumption. It is needless to say that such municipalities do not have good transportation connections with the outside world.

A community might have every variety of transportation and still not have cheap freight rates, because of the various methods not being properly organized. The proper handling of a corn crop, for instance, requires, first of all, men to harvest the corn, and wagons and horses to haul it to the big granaries in the nearby town. These granaries have a system of conveyers that automatically carry the corn from the corn bin to the freight car outside. If the empty freight cars needed are readily furnished by the railroad company and if the trains connect on to them as soon as they are filled, the transportation is perfect. The corn will be delivered in the market at the most favorable time, and thus will bring the very best price. But if there is a flaw in this transportation chain; if there are not enough men to harvest the corn, or not enough horses, wagons, or auto trucks to deliver the corn to the granary; if the granary conveyers are broken so that the freight cars cannot be loaded quickly; if the empty freight cars are not available or the trains do not haul away the cars when they are filled; if any one step is held up, then you have a situation where there are people wanting to buy corn and people with corn to sell, and still no corn being sold.

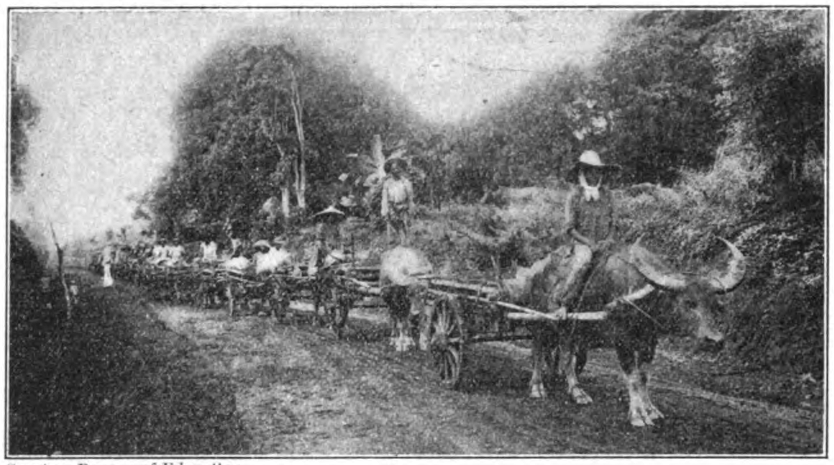
The present European war has brought out very forcibly the evil results of a break in this transportation organization. As soon as war broke out, German cruisers went out to capture English and French merchant ships, and English cruisers went out to capture German ships. As a result the merchant ships were afraid to leave port. Immediately the scarcity of foodstuffs began to be felt in Europe, in spite of the fact that the American farmers had just harvested the biggest wheat crop in their history. The railroads of Europe were running the same as ever, and so were the railroads in America. Only one link, that of ocean transportation, had been broken; but that one link was enough, because it severed the transportation chain that connects the wheat fields of America with the food markets of Europe.

The Philippines are suffering from this war for the same reason. The Philippine customs receipts have fallen off very seriously, not because the Filipinos have stopped buying European goods, but because Europeans have stopped sending goods here to sell. They have no ships that they can use for shipping their goods here. If the war continues long enough, the neutral countries like the United States, Spain, and Latin America will buy or build ships sufficient to reorganize the ocean transportation and thus permit the international transportation chain to be connected up again.

Perhaps the best example of well-organized transportation is the Post Office Department of the Government. It uses cargadors, carabaos, horses, carts, wagons, auto trucks, barotos, sailboats, launches, and ships. For 24 centavos it will carry a kilo of cloth to New York City; for 4 centavos it will carry a personal letter to New Orleans; for P1.50 it will guarantee the safe delivery of the P200 you wish to send to your friend in Chicago. Because of the great quantity of freight handled, it can carry economically almost any kind of goods in almost any quantity. The Post Office Department does not sneer at the carabao or baroto. It knows that there are places where the carabao is the fastest and the baroto the safest method of carrying things. With this understanding of transportation methods and organization, we are in a position to study the various means of transportation employed in the Philippine Islands.

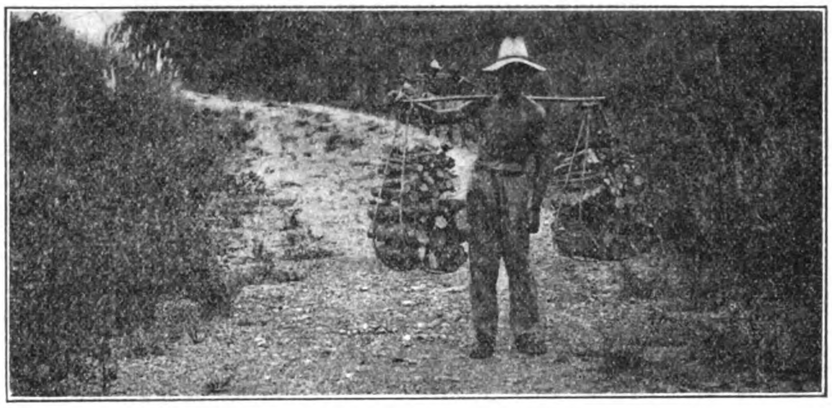
The cargador is perhaps the most primitive method of transportation. Man certainly carried goods himself before he learned to employ animals to carry them for him. Cargadors carry things differently in different countries. The American or European carries his packages in his hands or arms; if he is a hunter or peddler, he may carry his pack on his back. The Oriental cargador usually carries his load in two bundles—one at either end of a balancing pole that teeters on his shoulder. There can be no doubt that this Oriental method is the most efficient where the carrying is for any distance and the road is passable. The variations of cargador transportation, such as the sedan chair, the hammock, or the holding basket involve no new principle of transportation and therefore need not be discussed here.

The pack animal is another primitive method of carrying. This method is in common use in certain parts of the Philippines, especially in the Mountain Province and in Agusan. Pack animals have the advantage of being adaptable to every kind of surface. A pack horse or carabao can follow a narrow trail, ford a stream, plunge through a mud hole, or travel over a first-class road without injury to the surfacing. The disadvantage is that the animal cannot carry half the load on its back that it can pull in a sled on a mud road or in a cart on a good road. In short, packing does not secure the maximum use of the transporting power of the animal.



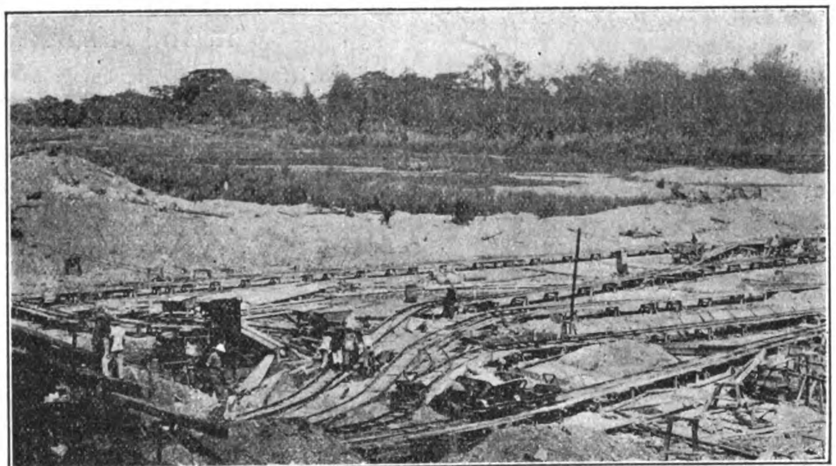
Courtesy Bureau of Education.

Train of bull carts drawn by Carabao.



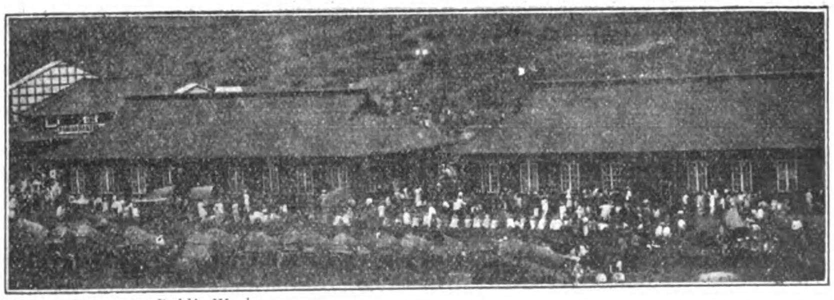
Courtesy Bureau of Public Works.

The cargador with his pinga."



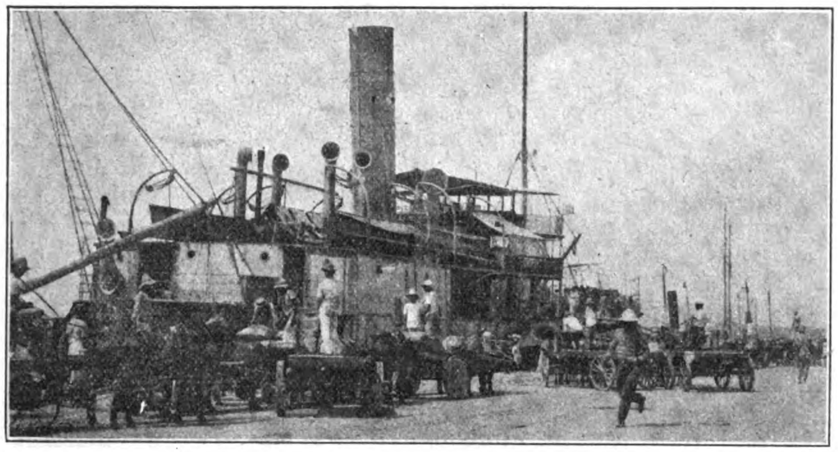
Courtesy Bureau of Public Works.

Temporary tracks laid for construction of dam at San Miguel irrigation project.



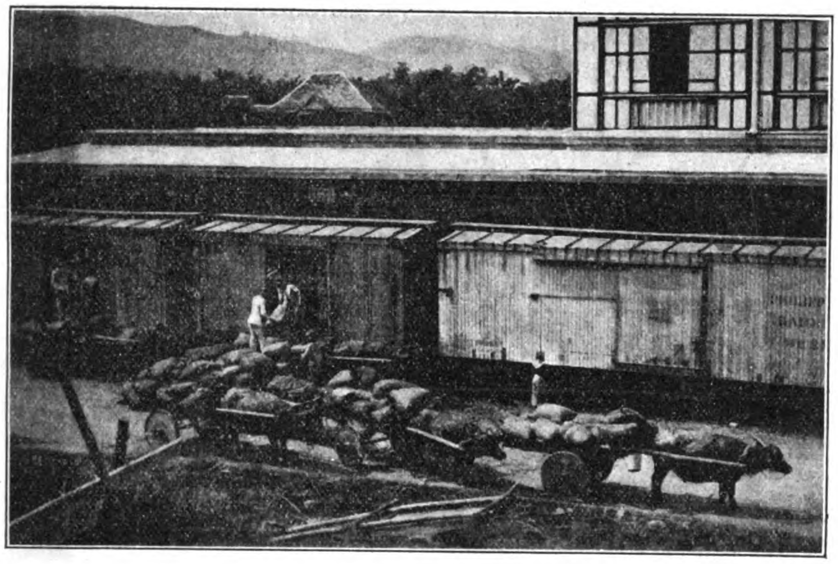
Courtesy Bureau of Public Works.

Baguio market. Without transportation facilities there could be no markets.



Courtesy Bureau of Education.

At the dock in Cebu.



Courtesy Bureau of Education.

At the freight station in Cebu.

Courtesy Bureau of Education.

Cargadors carry both passengers and freight.

There are many kinds of sleds in the Philippines. The most primitive one consists of two poles with a cross piece, the trailing ends of the two poles serving as runners. It was common among the American Indians under the name of travoix. An improvement on this is the one that has a square or rectangular bed fastened onto the long poles and then two short poles slanting from the rear end of the bed as the rear runners. An interesting modification of this sled is the one used for fording deep streams. The four poles that serve as runners are from 3 to 6 feet long, thus putting the bed of the sled some 3 or 4 feet off the ground. The most common sled is the one with two horizontal runners. This sled is usually some 5 or 6 feet long with runners from 2 to 4 inches wide. The American mud boat, a sled with very wide and very long runners, is not used in the Philippines.

Sleds are the only satisfactory transportation for mud roads and fields. Furthermore, for very soft ground the carabao is the only satisfactory animal to pull the sled. The trouble with sleds is that the friction is so great on a hard road that they are not economical. They require mud as a lubricant. The road authorities object to sleds because the farmers are always crossing the roads with them to get from the field on one side to the field on the other, and in so doing the front ends of the sled runners tear the shoulder away from the road. Where many sleds have to cross the road, the caminero builds a special roadway from the road to the field on either side so that no damage will be done by the passing sleds.

Carts are the simplest type of road vehicle. They are of two kinds, viz., those with rigid axle and those with free axle. The rigid-axle type have nothing in their favor except cheapness of construction, because the rigid axle compels one wheel to slide at every turn of direction of the cart and thus the iron tire tears and grinds the stone surface of the road. This type of cart is prohibited by law and by public opinion.

The free-axle carts are divided into the wide and the narrow tire classes, a wide tire being one 3 inches or more in width. The narrow tires are prohibited on first-class roads and should be prohibited on all roads, because the softer the road the more they cut it. Like the rigid-axle cart, the narrow-tire cart has no advantage except its smaller original cost.

Wagons are not used very much in the Philippines. Wagons require good roads and are more expensive. They are more convenient than carts and are easier on the roads, because the load is distributed on four instead of on two wheels, and they grind the road less on turning than a two-wheeled cart.

Wagons, and particularly auto trucks, should be encouraged in the Philippines, not that they may replace the carabao, but rather that the carabao may be relieved of road transportation in order to be free to do the sled hauling, the plowing, and other draft work in the mud for which the carabao is especially fitted. For these operations there is such a scarcity of animals at present as to hold back the agricultural development of these Islands.

A rough estimate made by the B reau of Public Works in 1909 gives a total of 76,000 sleds, 22,00 0 narrow-tired carts, 14,000 rigid-axle carts, and 30,000 wide-tired carts. For several years the Government offered special inducements to those who would use wide-tire carts, and the wheelwrighting department of Bilibid Prison used to make large numbers of wide-tired wheels for the provinces every year. At present the number of black-smithing and wheelwrighting shops have increased so much in the provinces that relatively few orders are now sent to Bilibid Prison for these wheels, although the number being used in the provinces is increasing every day.

In 1909 there were very few autos and auto trucks in the Philippines; to-day there are 355 auto trucks, 1,933 automobiles, and 818 motorcycles. About half of these motor vehicles are outside of Manila. The rapid growth of the auto-truck lines in the provinces is proof that there is a great demand for this kind of transportation which serves as a connecting link between the municipal transportation system of cargadors, pack animals, sleds, and carts and the inter-island system which consists of ships. Railroads serve as this connecting link in some places, but railroads are so expensive in construction and maintenance that they are economical only when the amount of freight to be transported is very large. The geographical formation of the Philippines, which consists of a large number of small valleys separated by high mountains, makes the use of railroads absolutely impracticable except in a few places like central Luzon and central Panay.

One great advantage of a road over a railroad is that it is more democratic. Railroads in the United States have made and unmade cities by arbitrarily lowering and raising the freight rates. In the case of a public road, the farmer can have his grain hauled by the auto-truck companies if their rates are low, but if they raise their rates in order to double their profits, the farmer can buy, rent, or borrow carts and haul his own grain to market.

Transportation from Ibajay in Capiz Province is by water. Two companies buy copra there and about twice a year a ship stops off shore to get this cargo. As no other boats stop there, the Ibajay farmers must sell their copra at the prices offered by these two concerns that have occasional transportation. Calivo is farther from Manila than Ibajay, but Calivo has a good port and has available transportation to Manila almost every ten days. When

the semiannual boat is due to stop at Ibajay the copra buyers pay as much for copra as do the buyers in Calivo, but the situation the rest of the year is illustrated by the fact that from January to July, 1913, the price paid for copra in Calivo was 17 centavos a kilo, while the price in Ibajay was only 10 centavos. The distance between the two towns is only 28 kilometers, and a first-class road is just being completed between them. It does not take much of an expert to figure out what the Ibajay farmer will do if such a difference in price ever arises again. This difference of 7 centavos a kilo amounts to P43.75 on a 10-picul load. The owners of carabao carts or auto trucks would soon get rich if they could get one-third of this amount for hauling 10-picul loads 28 kilometers over a good road. The most of the difference between the local price and the Manila price for copra and hemp is the cost of transportation to Manila. In some cases this difference is so great that the opening up of efficient means of transportation will increase the local price from 50 to 100 per cent.

The building of good roads and the increase of carabao and auto-truck transportation will not only decrease the cost of hauling to the seashore, but also it will decrease the cost of the water transportation. As late as 1908, the interisland transportation system consisted of a number of small steamships that made many stops on each trip out from Manila. The amount of freight loaded at some of the towns was so small that the Government had to subsidize the steamship companies to get them to stop there. The Government was justified in doing this because at that time these towns had no other outlet for their products. Now these outlying towns are being connected with the good port towns by roads and railroads. By means of river, estero, road, and railroad the freight can be concentrated at a few ports, thus enabling the steamships to reduce expenses by making fewer stops and also enabling them to handle this freight more economically by means of docks, cranes, and other devices for decreasing the cost of loading large quantities of freight. It is a universal rule that the cost of transportation per kilo per mile decreases as the amount of goods to be hauled increases.

The necessity for low grades, good bridges, and good surface all the way on a road is just as great as the need for the road itself. Just as a chain is no stronger than its weakest link, just so is a road no better than its worst mudhole, highest hill, or weakest bridge, so far as freight traffic is concerned. In loading a carabao cart for a trip from town A to town B, the thing that determines the size of the load to be hauled is not the amount that the carabao can pull on the best part of the road, but rather the amount the carabao can pull over the steepest hill or through the worst mudhole on the trip. A 2 per cent grade requires twice the pull of a level road, and a 10 per cent grade requires six times the pull. With the ordinary load for a long trip the animal can pull over a 3 per cent grade of average length with great effort; if the grade is 6 per cent, the load must be lessened by a half in order to get over the hill.* It is a waste of money to build a fine surfaced road with steep grades, or a level, nicely graded road with mudholes and weak bridges. The best road is the road that enables the farmer to put the largest load on his cart and haul it all the way to market with one carabao in the least time.

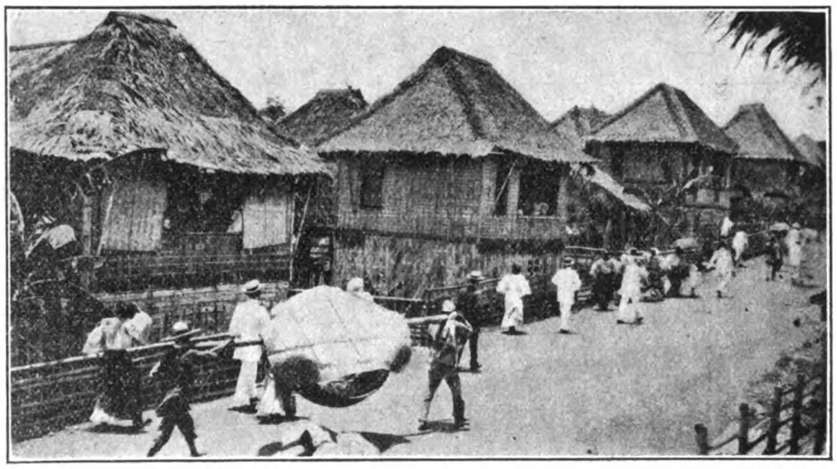
There are at least a dozen roads in the Philippines traversed by more than 1,000 vehicles a day. One big washout, one bad mudhole, one broken bridge, one large landslide will stop every one of these thousand or more vehicles. It is a situation like this that makes the road foreman and the humble caminero feel the responsibility of their position. Maintenance is just as important as construction in road work. One must think of transportation as a continuous procession that goes on and on—as a procession that is formed by individual men or animals that come out of forest, field, and barrio to join the throng on the highway. Anything that impedes the progress of this procession affects every forest, field, and barrio that has contributed a member to the procession.

In the industrial work of the Bureau of Education this problem of transportation has not been ignored. School-made baskets, for instance, have been designed so as to pack into the minimum of space. This result is achieved by making the various baskets so that they will nest or telescope into each other, or fit flat against each other. This care in designing not only decreases the cost of transportation by decreasing the bulk of the articles shipped, but also it decreases the probability of breakage in shipping.

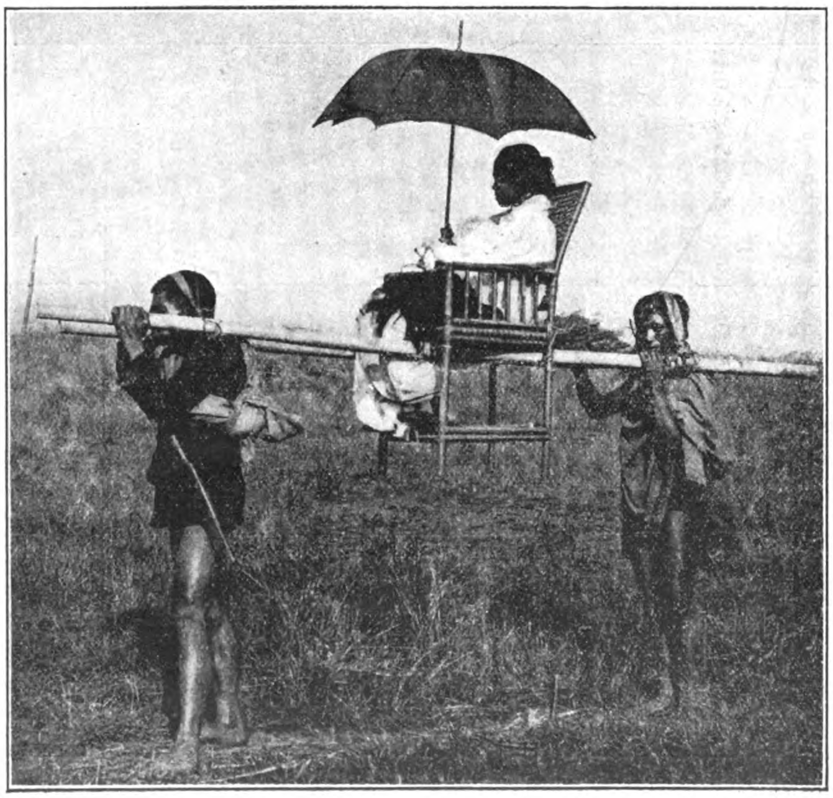
In earlier stages of civilization people live by a self-sufficing economy. That is, each family produces all the things that it needs. In such a civilization there is no need for a transportation system. The Negritos have no use for carabao carts, auto trucks, or steamships, but the Negrito does not get very much out of life. Just as soon as a people begin to have higher wants, they must seek abroad for the means of satisfying these wants. The more civilized a people become, the more specialized are the industries of its individual members. One individual, one family, one company, one community specializes on the manufacture of hats, and finds that it can make them much better and much cheaper than those individuals who try to till the soil, weave cloth, make hats, and build houses all at the same time. But because this family or this community has specialized

*A 2 per cent grade is one that rises 2 meters for each 100 meters of road.

Courtesy Bureau of Education.
Carrying kapok pillows. A means of transportation found in many countries.



Courtesy Bureau of Education.
The hammock is a common means of carrying people, especially sick people, where roads are bad.



Courtesy Bureau of Education.
A stylish method of transportation in the wild country.

on hats, it produces more hats than are needed for local consumption; consequently some of its members must get cargadors, carabao sleds, or auto trucks, load them with hats, and travel into other communities to sell the surplus hats. Also, since this community devotes practically all of its working time to making hats, it has no time left to weave cloth, grow rice, or build houses; consequently this community must find men to build its houses and must buy cloth and rice elsewhere. The Negrito has no use for a transportation system. The specialized community cannot live without a transportation system.

The school teacher must not only teach his pupils how to become specialists in farming, hat making, carpentry, or other industry, but also he must do what he can to see that the local transportation system is developed so that these specialized industries may be profitably carried on. He must teach his pupils that a complete system of transportation for the Philippines requires cargadors, sleds, carts, wagons, carabaos, horses, autos, auto trucks, railroads, barotos, rafts, balsas, cascos, praos, launches, and steamships Each one is a step in the process that carries goods from the producer to the consumer.

Just as it is necessary that we develop respect for manual labor, because most of the work in the Philippines must be done by manual labor, just so must we develop respect for the sturdy cargador, the plodding carabao, the simple sled, and the humble caminero, because without these the rumbling auto truck, the swift-going railroad train, and the capacious steamship would have nothing to haul. The railroad train can never bring the hemp from the jungle on the mountain side, and the auto truck can never carry the rice direct from the rice field.

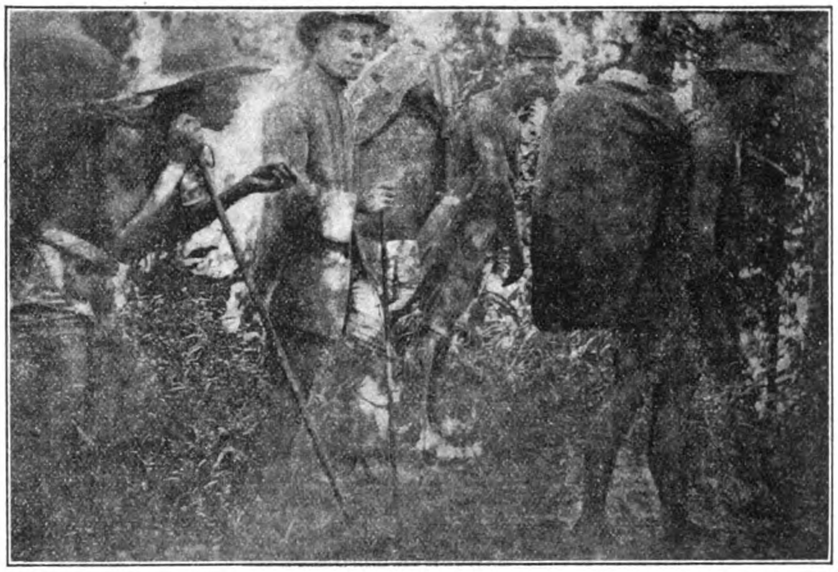
The teacher should also help develop the public opinion needed to maintain good roads, by explaining to the pupils the necessity of maintenance as well as the necessity of new construction. The teacher should explain how narrow-tired and rigid-axle carts destroy the roads, and how wide-tired, free-axle carts make the road last a long time; how the saving of maintenance expense on one road makes possible the rapid extension of good roads to other parts of the municipality.

It would be an inspiration to the pupils for the teacher to portray for them in a vivid word picture how the farmer collects the coconut from the tree, how the schoolboy helps his father prepare the copra, how it is hauled to the local copra buyer on a sled drawn by the faithful carabao, how it is shipped on by bull cart, auto truck, or baroto to the port where it is loaded on a steamship for Manila. How many small steamship loads combine to make the cargo of a mighty ocean liner that carries the copra to Marseilles or New York, how it is made into butter and soap there and shipped out in all directions to the consumers, and finally, how a little girl on a Texas farm washes her hands with coconut-oil soap and sits down to breakfast to eat wheat cakes spread with butter made from this coconut oil. The schoolboy will learn his geography more easily if he realizes in this vivid fashion how directly he is connected with the people of the Western World who depend on the people of the Tropics for so many of the luxuries of life.

The transportation circuit might be completed by having the father of this girl pump crude oil from the land of his farm and ship it by pipe line to the refinery where kerosene is made and shipped to the Philippines to furnish light so that the schoolboy can study in the evening after he has helped his father prepare the copra for its long voyage.

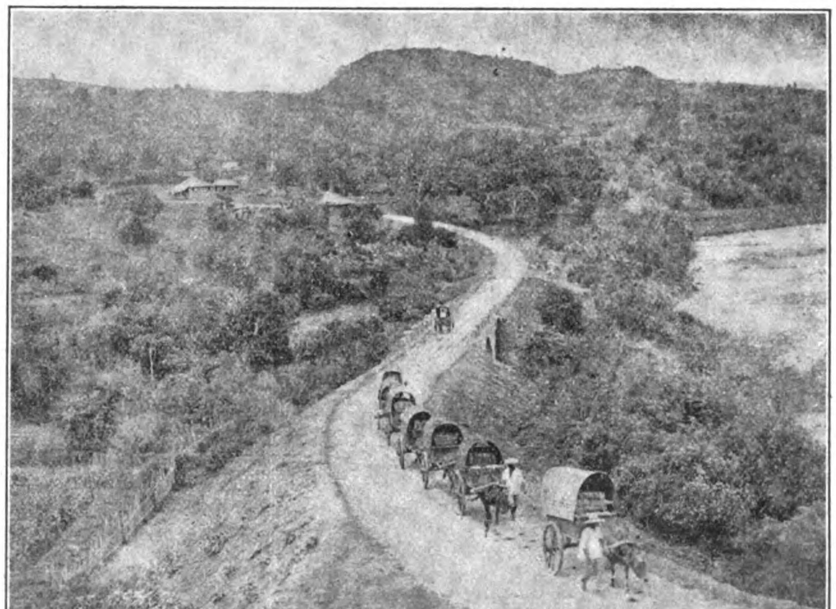
The Insular and provincial governments are doing all they can to improve the transportation facilities of the Philippines. In many instances the municipal governments and the individual Filipinos are not doing what they can to improve the roads of their respective communities. There are instances where the municipal council has clamored for provincial roads, when a few boards or a few loads of stone would have repaired the bridge or filled up the mudhole that blocked the entrance to their town. There are large barrios having reasonably good road leading up to them, but having also a large mudhole at the very entrance to the barrio that blocks the way to everything except a barefooted man, a carabao or a bullock. It is not an uncommon occurrence for a supervising teacher to repair a bridge himself in order to pass with his horse. There is a law in the United States to the effect that the mailman does not have to deliver mail to those portions of his district where the roads are in bad shape. If a snowstorm leaves piles of snow across the road so that the mail wagon cannot pass, the farmers must get out and shovel it away or else they will receive no mail until the snow melts. Some modification of this law might be of value in the Philippines.

There are approximately 2,234 kilometers of first-class road and 2,025 kilometers of second-class road in the Philippines, all of which are under the direct care of the Insular and provincial governments, but there are at least 12,000 kilometers of municipal roads in various states of repair, mostly impassable to cart traffic, that the Insular Government does not and never can look after thoroughly. The municipal officials, the individual citizens who are most interested, and the school teacher and school pupils should all feel a full measure of responsibility for keeping the important streets and the approaches to the schoolhouse in passable condition for people dressed in good clothes. The municipal officials, the merchants, and the farmers should see to it that the prosperity of the community be not lessened by mudholes and bad bridges that make interbarrio



Courtesy Bureau of Education.
The best way to carry a load through the jungle.

Courtesy Bureau of Education.
The Philippine cow carries tuba instead of giving milk.

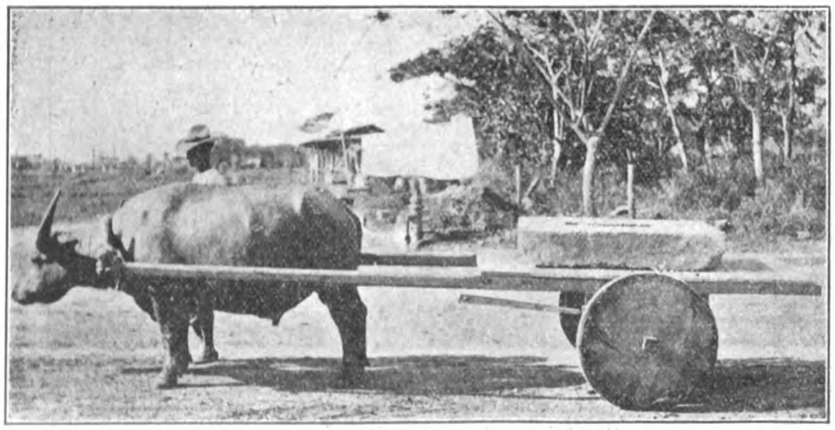


Courtesy Bureau of Education.
The main artery of trade into the Mountain Province. Naguilian Road from Bauang to Baguio.

Courtesy Bureau Public Works.
Pack train in Tayabas.

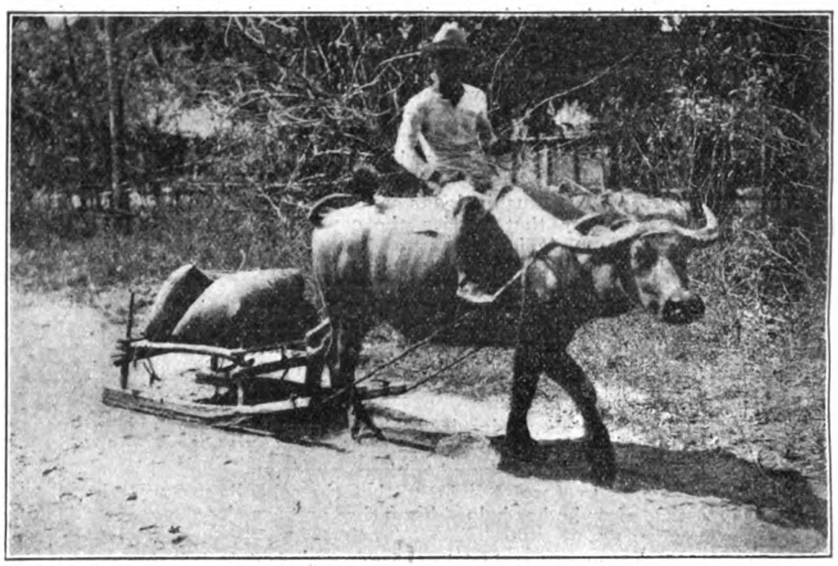
Courtesy Bureau of Education.
Carabao packing hemp and driver.

Courtesy Bureau of Education.
A modification of the travoix found in the Philippines.

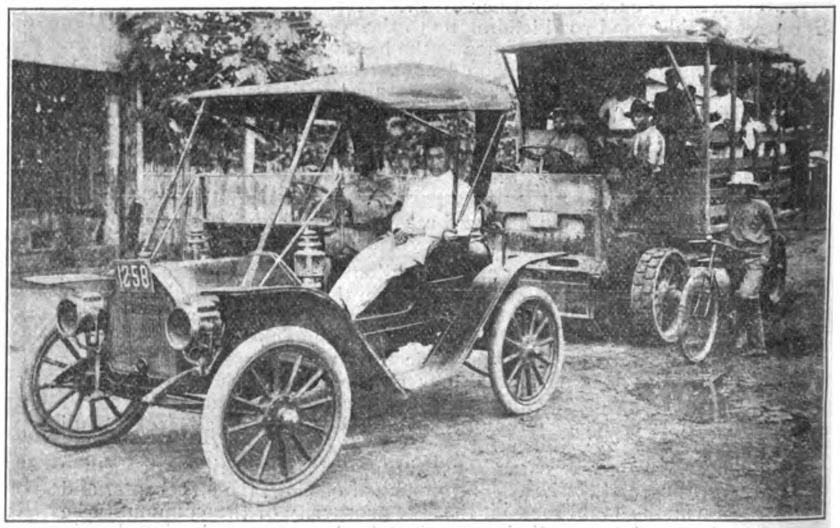


Courtesy Bureau of Public Works.
A rigid axle cart; cheap for the owner but expensive for every one else. Both law and public opinion are rapidly driving rigid ax carts from the Philippines.

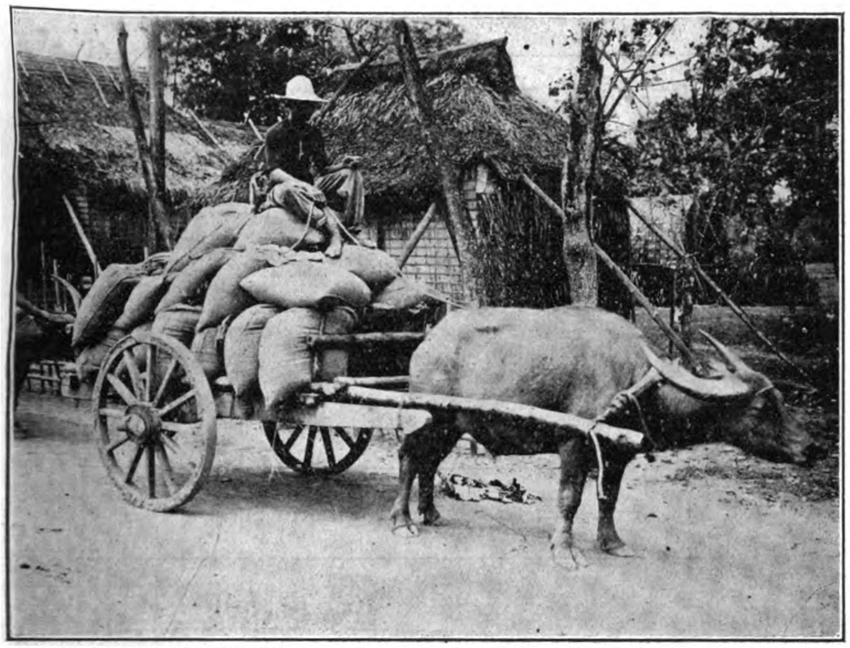
Courtesy Bureau of Education.
A travoix, the most primitive of sleds. Used very generally by the American Indians and occasionally by the Filipino farmers.



Courtesy Bureau of Education.
The ordinary sled found in many countries.

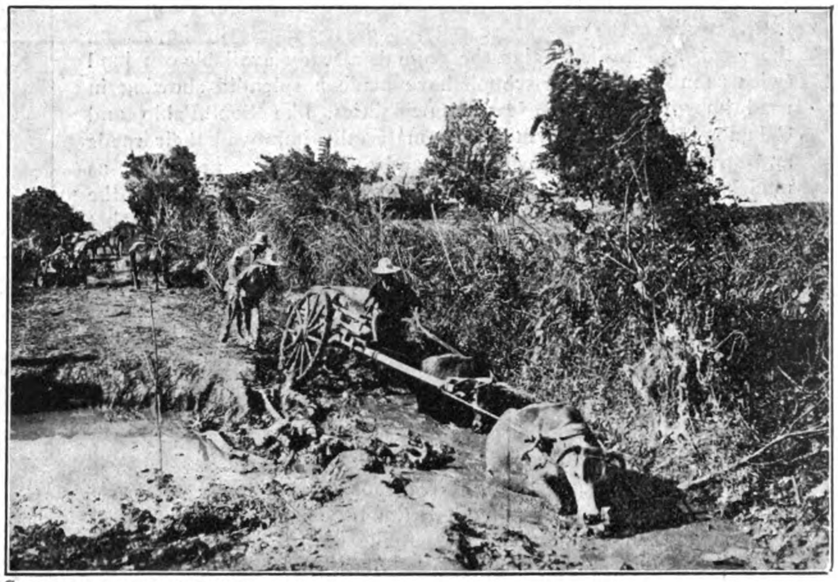


Courtesy Bureau of Public Works.
Three stages of automobile development—the bicycle, the automobile, the auto truck.



Courtesy Bureau of Public Works.

Twenty cavanes of rice loaded on cart over kilometer 1, Malolos-Hagoney Road, Bulacan Province. What good roads mean to the farmer who has few draft animals.

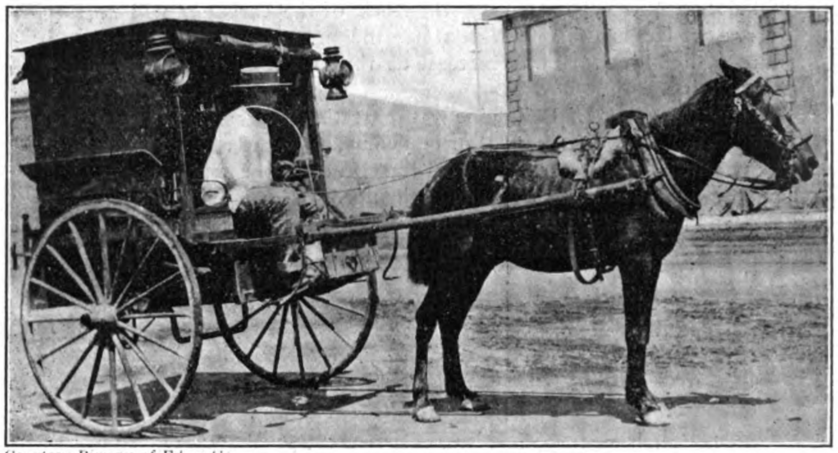


Courtesy Bureau of Public Works.

Bull cart loaded with 5 bags of rice in difficulty at a carabao wallow in Naic-Indang Road, Cavite Province.

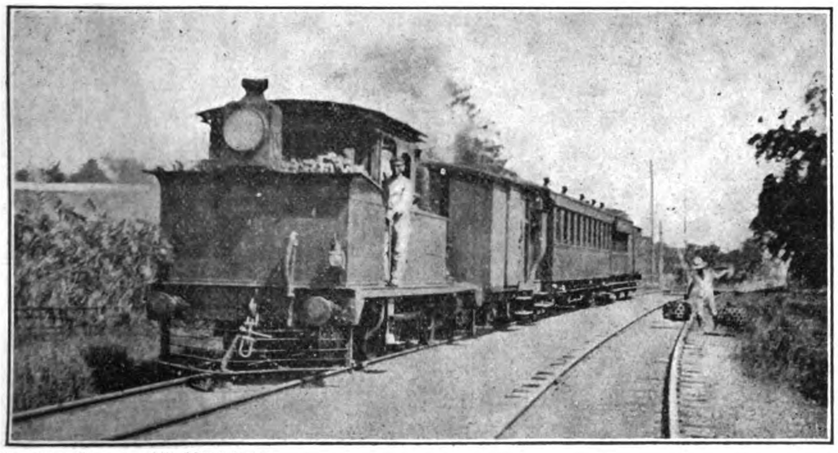
Courtesy Bureau of Public Works.

A freight auto truck. These trucks provide very cheap transportation where there is plenty of traffic over good roads.



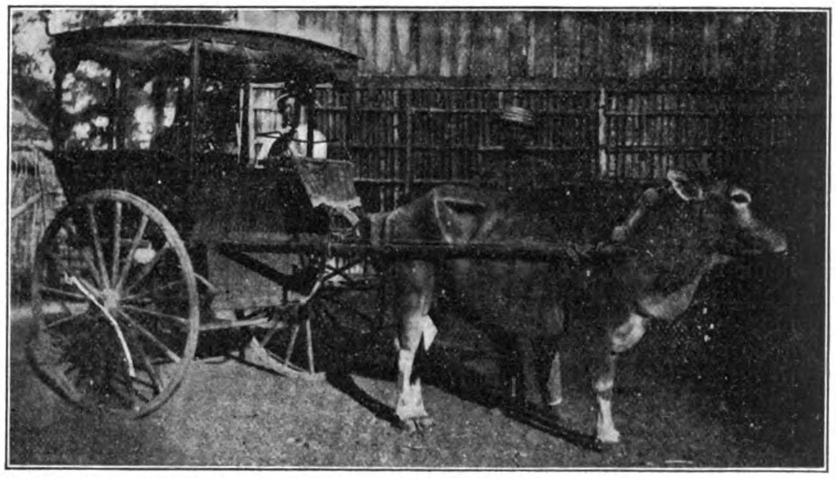
Courtesy Bureau of Education.

Horse and closed Quilis.



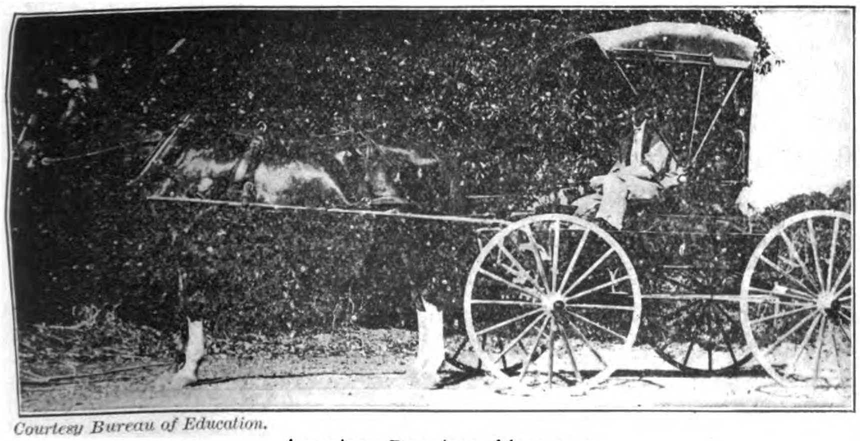
Courtesy Bureau of Public Works.

Train on Antipolo line.



Courtesy Bureau of Education.

Indian Bull drawing Quilis.



Courtesy Bureau of Education.

American Buggies seldom seen.

Courtesy Bureau of Public Works.

Showing the effect of lack of care in maintaining a well-constructed road.

transportation so exceedingly inefficient. Each community can do a little to relieve the present scarcity of draft animals by improving the roads and trails so that the animals already available can haul twice as much. A few schools have made a splendid showing in road improvement. A few municipalities, like San Pablo and Calamba in Laguna Province, have materially improved their roads and streets. If these few schools and municipalities are taken as models by the less progressive schools and municipalities, the organization of an efficient, economical transportation system that embraces every community in the Philippine Islands will soon be achieved. When that time arrives, every farmer in the Philippines will have the satisfaction of knowing that with reasonable bargaining ability he can get the best possible price for his produce.

The problem of transportation in the Philippines is a problem of organization and extension. The main arteries are provided by nature or are being constructed by the Insular and provincial governments. The capillaries of the system must be developed by the municipality, the barrio, and the individual. Where the road parallels the seashore, it gives transportation facilities the year round, while the sea is raging half the time under the goading of typhoon and monsoon. The automobile and the auto truck are increasing almost 50 per cent a year. Their mission is to do the heavy hauling on the main arteries in order that all the carabaos and bullocks may be available for the development of the capillary system that feeds the arteries. Long-distance carrying by cargadors will decrease year by year, but the work of the cargador wiil not decrease. He is the one who starts the products on their long journey, and his work will increase as the sum total of Philippine products increases.

The great need of Philippine transportation is organization—not organization by one individual or one company in the control of all, but a natural organization that works itself out by the common-sense adaptation of the means available to the needs of each community by itself, and to the needs of the Archipelago as a whole. There is no best method of transportation. There is only a best method for a given road and a given load. The transportation system will have been organized when each method finds its place of maximum efficiency in the system.

LEATHER GOODS IN SIAM

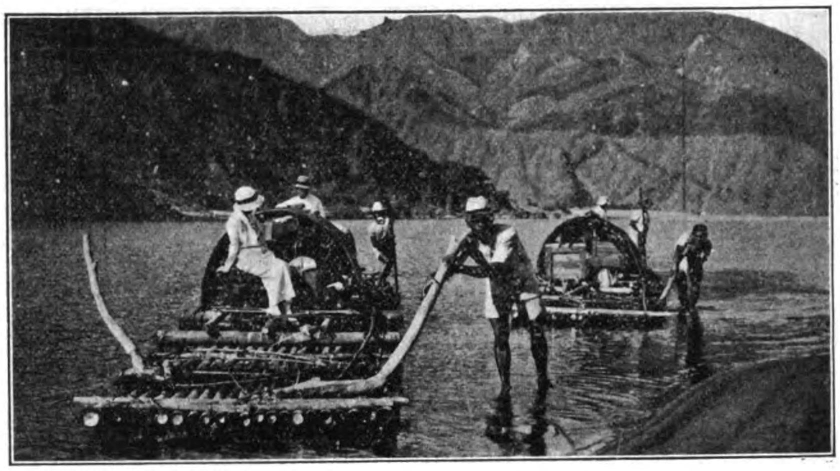
The leather manufactures imported into Siam are classified by the customs, under the heads of boots and shoes; saddlery; and leather manufactures, other sorts. The total value of these imports for the fiscal year ended March 31, 1913 was G. $184.599, a decrease of $455,148, as compared with the previous year. This large decrease appears to have been due to overstocking in the preceding year, and general trade depression in 1913.

The value of boot and shoe imports for the fiscal year 1913 was $62,990, as compared with $101,112 for the preceding year, a decrease of $38,122. This decrease may also be accounted for by the increasing demand for the home-made shoes of the Chinese bootmakers, who have steadily improved the style and quality of their output; moreover, these articles are cheaper than the imported goods, and can always be obtained in sizes to fit or be made to order. The home industry in footwear is entirely confined to the above-mentional Chinese handmade shoes, as there are no shoe manufactories in Siam using machinery.

Shoe imports from the United States showed a decline from $1,403 in 1912 to $1,117 in 1913. The superiority in style and durability of the American shoes, as compared with those of European local make, however, is admitted, the only drawback being the higher price. As in former years, the heaviest shipments of footwear continue to come from the United Kingdom and Germany.

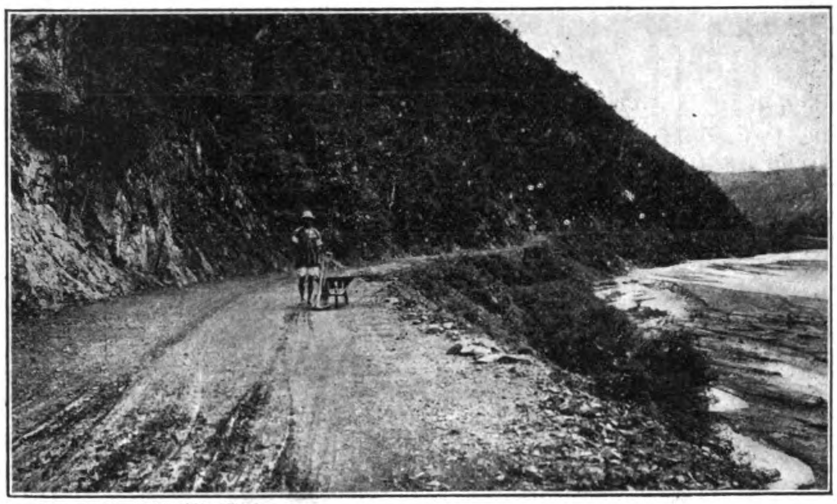
The saddlery imports have shown very little progress during the last five years, the total value for 1913 amounting to $19,451, against $15,889 for 1909. As in former years, most of these imports were supplied by the United Kingdom. Leather goods other than footwear and saddlery also showed a decline from $237,761 in 1912 to $102,158 for 1913.

The customs do not furnish any information as to the nature of the leather imports. However, as there are only one or two small tanneries in Siam, supplying sole leather only, the leather imports must consist chiefly of materials used by the Chinese bootmakers, such as sole leather, and uppers of calf, tan, glazed kid, etc.



Courtesy Bureau of Education.

One kind of cargador transportation in Ilocos Sur.



Courtesy Bureau of Public Works.

The caminero at his post, fighting back the waves on one side, the landslides on the other, and the ruts in the middle.

Courtesy Bureau of Education.

The billy goat helps complete the transportation system.

Courtesy Bureau of Education.

Jinrickishas are found only in Zamboanga.

JAPAN'S DEMANDS ON CHINA

A Discussion from the Point of View of China and Treaty Powers of the Situation Created by Japan's Efforts to Secure a Predominant Position in China

The Press of Japan, followed, or headed, by Count Okuma, the Premier, has with practical unanimity explained that certain demands were made upon China in January last solely in order amicably to settle a number of outstanding questions. At first there was no hint that China was to be punished for any act of omission or commission. Those, however, who recollected the angry outbreak in the Japanese Press a little earlier, when China made the perfectly natural and legitimate suggestion that the War Zone in Shantung, which had outlived the little usefulness it ever possessed, should be abolished, could not help the inevitable association of ideas. The method adopted in presenting the demands, the threat that any disclosure of their terms would entail serious consequences and the drastic character of the terms themselves gave rise to the belief that their presentation was intended to convey to the Chinese Government an intimation that it had offended Japan and that reparation was to be exacted.

To many people who were entirely unprejudiced it seemed that Japan was determined to fasten a quarrel upon China. In normal times it would be difficult for Japan to achieve her ambition of obtaining a position of paramounty in China in view of the undertakings she had entered into with other countries to maintain China's territorial integrity and the principle of the Open Door. But the European War gave Japan a golden opportunity. She was enabled to gain a firm footing in Shantung on the pretext that she was fulfilling her obligations to Great Britain. The belligerent Powers whom she was ostensibly "assisting" were naturally debarred from criticising the methods she adopted to render her assistance effective. The plea of "military necessity" was advanced to excuse what bore the aspect of flagrant breaches of China's neutrality. Assurances were, moreover, voluntarily given by Count Okuma, the Japanese Premier, to America, the one country that had the leisure to watch closely the happenings in the Far East and the force available to interpose if interposition became necessary, that Japan was animated by the highest and noblest motives. No other country was to suffer any kind of loss as a result of her military activities; there was no selfish idea of seizing an unexpected opportunity to advance Japan's interests. That was what the world was told, and so impressive was the assertion that Japan was actuated by good faith that in many quarters her *bona fides* were not doubted. Japan was, therefore, enabled to gain a firm grasp of Shantung with the tacit approval of the world.

An apparent change in Japan's policy became noticeable as soon as she had established herself firmly in Shantung. The word apparent is used because there is now every reason to believe that from the first Japan's sole motive in taking part in the hostilities was to extend her political influence in China. While making her way to a position whence she thought she could enforce her demands without danger of interference, Japan exhibited a touching solicitude for the preservation of China's independence and of the rights of all other nations in China. Safely seated, however, she acted in a manner justifying the charge that she scornfully ignored the other Powers, including her Ally, Great Britain, and presented to China a set of demands the acceptance of which meant national extinction and civil strife, while refusal, it was openly hinted, would involve war with Japan. That this is not an over-statement of the character of the demands is realized when they are considered in detail, a task to which we will later address ourselves.

In the February number of the FAR EASTERN REVIEW we were enabled to publish a summary of the text of the demands. The publication of the summary was timely as the Japanese Government refused to disclose the demands and had threatened China that dire consequences would ensue if they were made known. In passing it may be remarked this was extremely short-sighted policy. The certain effect of secrecy is to excite suspicion. That which is right and honourable need not fear the light. When it became known that the Government of Japan was pressing demands upon China which it would not allow to be divulged, it was very generally assumed that they must be of a character that would not bear inspection. The Japanese Government soon discovered that it had committed a bad blunder.

Notwithstanding all the efforts to keep the terms of the demands secret their general tenor was telegraphed to Great Britain and America by newspaper correspondents in Peking. To counteract the effect of this inconvenient disclosure of its designs the Japanese Government took the extremely risky step of denying that it had presented twenty-one demands to China. The Japanese Embassies abroad, while at first denying knowledge of the demands, ultimately issued statements that all reports from Peking were gross exaggerations inspired by Germany and that as a matter of fact only eleven demands of an innocuous character had been presented. What purported to be a complete list of the demands was supplied to the Governments of Great Britain, America, France and Russia. From this edition of the demands those to which the Treaty Powers could take most exception were carefully excluded. Many people have found it hard to believe that Japan should be so foolish as to endeavour in the first instance to prevent the demands from being divulged, and in the second to seek, after they had become known, to delude the other nations interested as to their extent and character. It must be admitted that it is difficult to understand why statesmen with such a reputation for astuteness as the Japanese should adopt measures so futile and so puerile, but there is no escaping from the facts. Japan deliberately took a course which reflects upon her trustworthiness and which has convinced many that her most solemn assurances must be received with the greatest reserve.

The first group of demands, four in number, relate to Shantung. It is as well to recall that prior to the European War Japan had no rights of any sort, other than those possessed in common with other Treaty Powers, in Shantung. She attacked Kiaochou, so the world was informed, in order to fulfil her treaty engagements with Great Britain and to preserve the peace of the Far East. There was not a whisper that Japan sought any advantages for herself; in fact the suggestion was indignantly repudiated in advance by Count Okuma, the Japanese Premier. This distinguished and venerable statesman went out of his way to assure the world that Japan was, as usual, animated solely by splendid unselfishness. Obviously after that it would have been unfair to suspect Japan of a deliberate design cheaply to acquire the fruits of a decade and a half of empire building by Germany. Japan told the world in effect that all she wished to gain was a genial glow of self-satisfaction induced by a consciousness of well-doing.

Leaving Japan for the moment suffused in a blush of self-conscious virtue and contemplating her own political rectitude with awed admiration, it is well to recall how the plant of German culture came to be implanted in the sterile soil of Shantung. Russia, it is known, had cast curious eyes upon the harbour of Kiaochou. In fact soundings had been taken, but an adverse report was apparently given to the Tsar's Government. However that may be Russia took no steps and when, as a consequence of the murder of two missionaries, German men-of-war steamed into the harbour and hoisted the German flag, there was none to bid them stay their hand. The nerveless Manchu

Government took no action, and in due course the Kiaochou Convention established Germany as a legal lessee of the Kiaochou Territory and gave her certain rights of railway construction and mining development. Germany also secured certain prior rights for the industrial development of Shantung. That is to say if China desired to obtain foreign capital for use for any purpose whatever German capitalists were first to be approached.

It is evident that Germany gave certain assurances to America after occupying Kiaochou.* But the publication of the extraordinary self-denying engagement by which Great Britain practically pledged herself to an acknowledgment of Shantung as a special sphere of influence, gave rise to apprehension in America. This document is worth republishing in view of the fact that it is the germ from which sprang the Open Door Declaration. The engagement was as follows:—

DECLARATION BY GREAT BRITAIN RESPECTING WEIHAIWEI

APRIL 19, 1898

England formally declares to Germany that in establishing herself at Weihaiwei, she has no intention of injuring or contesting the rights and interests of Germany in the Province of Shantung, or of creating difficulties for her in that province. It is especially understood that England will not construct any railroad communication from Weihaiwei and the district leased therewith into the interior of the Province of Shantung.

This Declaration might well give the Government of the United States of America cause to think. Although the principle of the Open Door had not yet become an article of political faith, the principle of the Closed Door, or Spheres of Influence, had not met with open support, least of all from Great Britain. Germany was the latest arrival on the Far Eastern field and had no established interests, yet Great Britain was apparently generous enough to acknowledge Germany's possession of a special Sphere of Influence. Exactly why Great Britain made this self-denying ordinance is not clear, but it may be supposed that the exigencies of European politics, to which China may fairly attribute many of her troubles, were responsible. Certain it is that the late Mr. John Hay, then American Secretary of State, immediately perceived the danger that was threatened to the principle of Equal Opportunity, to which more than any other nation America, as the one country that had not sought in China any exclusive advantages, territorial or commercial, was pledged. He, consequently, lost no time in asking the Powers to subscribe to the Open Door Declaration,† an instrument that has contributed, up to the present time, to preserve China from the fate that certain land and trade hungry nations had prepared for her. The prompt action taken by Mr. Hay undoubtedly arrested a tendency towards the partition of China.

This brief sketch of the circumstances in which Germany became possessed of the lease of the Kiaochou Territory and certain "rights" has to be kept in mind when attention is given to the Japanese claims in Shantung. Japan now adopts the view that she has succeeded to all the rights that Germany possessed in the province. There is no need to point out that this is an open repudiation of her original announcement that she was actuated by no ulterior motive in attacking Kiaochou and only wished honourably to fulfil her obligations to her ally. Japan would seem to have a penchant for ignoring a promise the keeping of which would prove embarrassing. The questions of right and wrong involved may, however, be disregarded and the situation created by Japan's demands considered.

The Shantung Demands

The first Group of the demands deals with Shantung and is as follows:

The Governments of Japan and China being desirous of maintaining the peace of Eastern Asia and of further strengthening the friendly relations existing between the two neighbouring nations, agree to the following Articles:—

1.—The Chinese Government agrees that when the Japanese Government hereafter approaches the German Government for the transfer of all rights and privileges of whatsoever nature enjoyed by Germany in the Province of Shantung, whether secured by Treaty or in any other manner, China shall give her full assent thereto.

2.—The Chinese Government agrees that within the Province of Shantung and along its sea border no territory or island or land of any name or nature shall be ceded or leased to any third Power.

3.—The Chinese Government consents to Japan building a railway from Chefoo or Lungkow to join the Kiaochow-Tsinanfu Railway.

4.—The Chinese Government agrees that for the sake of trade and for the residence of foreigners certain important places shall be speedily opened in the Province of Shantung as Treaty Ports, such necessary places to be jointly decided upon by the two Governments by separate agreement.

According to Japan she has succeeded to the rights of Germany, and in this she is asking China to concur. It will at once be seen that this means the perpetuation of a very dangerous precedent. If a successful belligerent were always to succeed to the rights of an adversary in China a vista of endless complications would be opened up. For example Japan has demanded exclusive mining rights in the Yangtsze Basin. If Japan were defeated in war by some other nation these rights would be transferred. Obviously the effect would be to render China's sovereignty an utter farce. If rights and privileges in China are to be made spoils of war there is no logical reason why the German section of the Hukuang lines should not be claimed by any or all of the Allies, if they be successful in Europe. Or, conversely, if the Dual Alliance defeated their adversaries in Europe they might claim Kowloon, Weihaiwei, and Kwangchauwan. China could never be certain in granting any privilege or concession to a Power whose intentions were known to be friendly, that it would not pass as a prize of war into the hands of a Power by no means well-disposed towards China. The reduction of the fortified base at Kiaochou was an inevitable result of the decision of Japan to take part in the war, and there could be little exception to the retention of the leased territory until the conclusion of the war, when its ultimate fate would be determined by the Council of Peace. In all probability in such an event the Powers would decide that as a recompense for her expenditure of blood and treasure Japan was entitled to occupy the territory for the unexpired period of the lease. The military character of Kiaochou made it liable to forcible seizure. The demand for the transfer of commercial and political rights in other parts of Shantung is on quite a different footing. It is worthy of passing remark that Japan evidently intends to conduct her peace negotiations with Germany independently.

The first article of the demands can only be taken as an announcement that Japan does not consider herself bound by the terms of the Anglo-Japanese Alliance to conclude peace in common with Great Britain.

Japan has not contented herself with claiming the rights of Germany in Shantung—which she evidently considers as spoils of war—but has demanded further and important concessions. The Chinese Government has been asked to agree not to cede or lease to any third Power territory within the Province of Shantung or islands along the coast, and also to agree to Japan building a railway from Chefoo or Lungkow to join the Kiaochou-Tsinanfu Railway. This is asking for concessions that were never granted to Germany and may be contrasted with Count Okuma's emphatic declaration on August 24 that Japan had no "ulterior motive" in attacking Kiaochou. The world certainly could not assume from that declaration that Japan entered the war with the object of transforming Shantung into a Japanese Sphere of Influence. That, however, is clearly what is aimed at, in fact what has been accomplished by military force directed, not against Germany, but used as a menace to China. The refusal of the Japanese Government to allow China control of the Customs at Tsingtau after the expulsion of the Germans was tantamount to declaring that Japan arrogated to herself entire freedom of action. The demand that more "ports" should be opened in Shantung is unobjectionable in itself, but it is not justified by any other circumstances than Japan's military success over Germany.

The Shantung demands show that Japan considers first that, although Great Britain took part in the reduction of Tsingtau, Japan alone succeeds to Germany's rights in the province; second,

*See letters which passed between the American and German Governments in 1899, published in the FAR EASTERN REVIEW of February, 1915.

†The letters which comprise the Open Door Declaration, were published in the February, 1915, issue of the FAR EASTERN REVIEW.

that victory over Germany has given Japan the right to press China for additional privileges and has in fact gained the position vis-a-vis China of a conquering nation that may impose what punitive terms it thinks fit. It should always be remembered in endeavouring to arrive at an impartial judgment on the question at issue, that China was absolutely guiltless of any offence towards Japan or any other country prior or subsequent to the outbreak of war. She has been throughout strictly neutral. The demands made upon her by Japan in reference to Shantung are such as might fairly have been made if China had been an ally of Germany. As she never occupied such a position and never extended any aid or comfort to Germany, the people of China feel that it is grossly unfair that they should be treated as a conquered nation, the more particularly as Japan had given solemn assurances that her only motive in attacking Kiaochou was the preservation of the peace in the Far East in accordance with her obligations to Great Britain.

South Manchuria and Eastern Inner Mongolia.

The claim has been advanced by apologists for Japan that the demands presented on January 18, apart from those relating to Shantung, have no connexion with the European War. This is, perhaps, true in a restricted sense, but it may safely be assumed that many of them would not have been presented if Japan had not concluded that the fact that most of the nations interested in China were engaged in a life or death struggle, gave her an opportunity to coerce China without the fear of outside interference. A study of the demands places this beyond doubt. The preamble of the second group of demands (those dealing with South Manchuria and Eastern Inner Mongolia) declares that

"The Chinese Government has always acknowledged the specially favorable position enjoyed by Japan in South Manchuria and Eastern Inner Mongolia," and therefore demands :—

1.—That the term of lease of Port Arthur and Dalny and the term of lease of the South Manchuria and Antung-Mukden Railways be extended to the period of 99 years.

2.—That Japanese subjects in South Manchuria and Eastern Inner Mongolia in erecting buildings for the purpose of trade and manufacture or for farming shall have the right to lease or own land so required.

3.—That Japanese subjects shall be free to reside and travel in South Manchuria and Eastern Inner Mongolia and to engage in business and in manufacture of any kind whatsoever.

4.—That Japanese subjects be granted the right of opening all mines in South Manchuria and Eastern Inner Mongolia, such mining places to be jointly decided upon by the two Governments.

5.—That in respect of the two following subjects mentioned herein below the Japanese Government's consent shall be first obtained before action shall be taken :—

(a.)—Whenever permission is granted to the subject of a third Power to build a railway or make a loan with a third Power for the purpose of building a railway in South Manchuria and Eastern Inner Mongolia.

(b.)—Whenever a loan is to be made with a third Power pledging the local taxes of South Manchuria and Eastern Inner Mongolia as security.

6.—That if the Chinese Government in South Manchuria or Eastern Inner Mongolia employs advisers or instructors for political, financial, or military purposes the Japanese shall first be consulted.

7.—That the control and administration of the Kirin-Changchun Railway shall be handed over to the Japanese Government to take effect on the signing of this agreement, the term to last for 99 years.

The Chinese Government strenuously denies the assertion contained in the preamble of this group of demands. The furthest it is prepared to go is to agree that Japan has succeeded to the rights and privileges of Russia in South Manchuria as defined in the Treaty of Portsmouth, and the Convention between Russia and Japan. It cannot seriously be affirmed that what Japan demanded did not constitute a wide extension of what was taken over from Russia. Russia certainly did not possess the right to own land and exploit mines throughout South Manchuria. She had no prior rights of supplying funds for railway construction purposes, nor did she compel China to agree to appoint Russian advisers for political, military, financial and police affairs. Whatever degree of favourableness Russia's position in South Manchuria gave her she most assuredly did not avowedly cherish the grandiose ambitions that Japan harbours. In regard to Eastern Inner Mongolia Japan in the ordinary acceptation of the term, possesses no special rights whatsoever. China has always regarded the retention of her full sovereign rights over Inner Mongolia as of the highest strategic importance. The capital is dangerously accessible from the North, and it has always been one of the chief concerns of Chinese statesmen to prevent China's position in any part of Mongolia from being weakened. In the diplomatic history of China much space would have to be given to the efforts made to resist Russian encroachments upon Mongolia; efforts that were attended by a large measure of success prior to the Revolution, which gave Russia an opportunity of which she promptly availed herself. We think that we are justified in saying that there is no undertaking, that has been published to the world, that gives Japan that right to claim a specially favourable position in Eastern Inner Mongolia. Further we find it difficult to believe that there exists any secret engagement on the part of China that would justify Japan in claiming this position. Clearly then China cannot be blamed if she resists this demand to the utmost extent of her power. In spite of any explanations and qualifications made by Japan the preamble to this group of demands clearly indicates that she wishes to reduce China's sovereignty over the vast region concerned to the vanishing point.

Despite China's efforts to keep the question of Eastern Inner Mongolia out of the discussion the Japanese Minister was determined that it should be dealt with, and at the twenty-second Conference endeavoured to persuade the Chinese to give it consideration on terms similar to those insisted upon in regard to South Manchuria. The Chinese Minister for Foreign Affairs showed a disposition to enter into some bargain with Japan for the withdrawal of group five of the demands. We sincerely trust however that China will not be persuaded to abandon her historic policy in regard to Mongolia for any inducement that may be offered.

In a previous article it was pointed out that the demand that the term of the leases of Port Arthur and Dalny, of the South Manchuria Railway and of the Antung-Mukden Railway should be extended to a period of 99 years was not open to much objection. The method by which Japan secured the lease of the Antung-Mukden Railway in the first instance might be considered open to question, but it is certain that Japan has, by enormous expenditure and intelligently directed effort, done wonders in the Leased Territory. The railways also are most efficiently administered. Those who are most opposed to Japan's political methods cannot honestly withhold praise for the steady and systematic manner in which she has developed the properties that came into her possession as a result of the war with Russia. There is nothing unreasonable in the request that she should be permitted to enjoy the benefit of the possession of what are practically her own creations for a period of time that would enable her to reap the fruits of her energy and expenditure. It may be as well at this stage to make it clear that in whatever we have written we have never sought unfairly to criticize Japan for claiming anything to which she might be entitled by the trend of events. What we have endeavoured to show is that Japan is running a great risk of losing, not only the friendship of China—which is of incalculable value to Japan owing to her geographical situation—but the esteem of the Powers, in persisting in pressing certain demands that vitiate China's sovereignty and deteriorate if not destroy the rights of other nations. With Japan's legitimate aspirations we are in full sympathy, but when she aspires to the position of protector of China with full enjoyment of all the privileges attaching to that position, we feel it our duty to warn Japan that she is venturing on very dangerous ground. All nations are more or less dependent the one upon the other. Japan, a debtor nation, cannot afford to estrange the goodwill of China, naturally her best customer, and of the other nations whose financial assistance is essential to Japan's development. But these are not the most important considerations that should operate to stay Japan's hand. Her national character for good-faith, her honour, is jeopardized. If it were possible, by

military coercion, to compel China to accept all the demands as they were originally presented Japan would gain but a Pyrrhic victory. Not only would she have to burden her people with crushing imposts for military preparation against the inevitable day of reckoning, but there would be no single nation in the world to which she could turn for friendship or assistance. Certain of the demands plainly prejudice the interests of her own Ally, and signs are not wanting that a very severe strain is being put upon the patience of Great Britain. It is due to Japan that she should be frankly warned of the danger of the course she is pursuing, and the warning should be accepted as a proof of good-will rather than an indication of enmity.

Japan has asked for her subjects in South Manchuria and Eastern Inner Mongolia rights that would import into these regions a large alien population clothed with the privileges of extra-territoriality. Very properly, China has declined to discuss this proposition as far as Eastern Inner Mongolia is concerned. But in regard to South Manchuria there is the insuperable objection that were China to give way she would lose her jurisdiction over practically the whole of Manchuria (as it might confidently be expected that Russia would demand in North Manchuria anything secured by Japan in the southern part of the Three Provinces.) China has been asked to agree that Japanese subjects should have the right to reside and travel and to engage in any kind of business and manufacture in South Manchuria, and the right to lease or own land for the erection of buildings for the purpose of trade and manufacturing or for farming and stock raising. It is obvious that if these were agreed to, Japanese state-aided enterprises could be dotted all over South Manchuria, and China would have no jurisdiction over the occupiers of the land. To all intents and purposes the areas occupied by the Japanese would be alienated from China, as with the growth of the Japanese communities it is certain that there would come a demand for the control of policing and other municipal functions. The Chinese authorities and police would be powerless to function, as extra-territoriality would debar them. Right of entry to land and premises could not be insisted upon by the Chinese police and other authorities and consequently the Chinese Government would lose jurisdiction over an area only limited by the extent to which the Japanese could appeal to the cupidity of the Chinese landowners. Moreover it would appear that by virtue of the Most Favoured Nation Clause other nationalities would acquire whatever rights the Japanese secured. Clearly this would tend further to restrict China's jurisdiction and to increase the chance of complications. Several proposals were made by China to endeavour to prevent the loss of jurisdiction. She at first proposed that all civil and criminal cases should be adjudicated by Chinese Courts in the presence of the Japanese Consul. This was an endeavour to apply the arrangement arrived at by China and Japan in regard to the Korean subjects residing in Chientao. Article IV of the Chientao Convention was as follows:—

> The Korean subjects residing on agricultural lands within the mixed residence district to the north of River Tumen shall submit to the laws of China, and shall be amenable to the jurisdiction of the Chinese local officials. Such Korean subjects shall be accorded by the Chinese authorities equal treatment with Chinese subjects, and similarly in the matter of taxation and all other administrative measures, they shall be placed on equal footing with Chinese subjects. All cases, whether civil or criminal, relating to such Korean subjects shall be heard and decided by the Chinese authorities in accordance with the laws of China, and in a just and equitable manner. A Japanese Consular Officer or an official duly authorized by him shall be allowed freely to attend the Court and the hearing of important cases concerning the lives of persons. Previous notice is to be given to the Japanese Consular Officers. Whenever the Japanese Consular Officers find that a decision has been given in disregard of law, they shall have right to apply the Chinese authorities for a new trial to be conducted by officials specially selected, in order to assure the justice of the decision.

It is to be remembered that this Convention was signed in 1908, or prior to the annexation of Korea by Japan, and it is quite possible that Japan would feel less diffidence about surrendering the extra-territorial rights of Korean subjects than those of Japanese subjects. In any event China's proposal, which in the first instance did not include the provision that if the Japanese Consular Officials found that a decision had been given in disregard of law they could apply for a new trial, was not accepted. China offered to include this provision when her first suggestion was rejected. When the Japanese refused to agree to this China offered to give up criminal jurisdiction. As the Japanese were still obdurate she announced her willingness to renounce both criminal and civil jurisdiction except in land disputes. Although China has gone more than nine tenths of the way to meet Japan's demands and has only reserved to herself a tattered shred of sovereignty, Japan has not yet agreed to the proposal.

Turning to the mining demands the question arises how far their acceptance might be deemed an infringement of the principle of Equal Opportunity. As originally worded Japanese subjects were to be given the right of opening "all" mines in South Manchuria, necessarily to the exclusion of the subjects or citizens of other countries. To the layman this would seem to be closing that Door which, in so many treaties, Japan had bound herself to assist to keep open. If Japanese were to have the exclusive right of mining in South Manchuria it appears clear that others would not have an "equal opportunity" in that region. However, eventually the Japanese agreed to a proposal that nine mining areas should be selected for exploitation by Japanese subjects. By this limitation the objection that the principle of equal opportunity was being disregarded may be removed, though the term "areas" is vague and might be interpreted in a very comprehensive manner.

The claim that preference should be given to Japan if China desired to raise a loan on the security of the local taxes of South Manchuria or to raise a loan for the purpose of building a railway in South Manchuria, which was granted by the Chinese negotiations, was evidently designed to render Japan safe from interference in this region by any other Power. The principle of equal opportunity has certainly been disregarded as it is now impossible for any nation to assist China in the development of South Manchuria without first securing Japan's permission. Evidently when Japan took over Kiaochou she also took over Germany's policy, as, it will be remembered, Germany secured a similar preference in Shantung.

That Japan should seek to secure control of the Kirin-Changchun Railway is not to be wondered at, as possession of the line is of great strategic importance. The railway is to be eventually extended to Hunchun in Northern Korea, and when this extension is completed it is obvious that Japan will have it within her power to throw troops into Central Manchuria much more speedily than by way of Dalny or Fusan. It has to be noted that Japan has secured the right to build a line from Changchun to Taonanfu, and to Jehol, which will also be of great military importance in certain eventualities. As is pointed out in the report of the conferences at the end of this article China has consented to a fundamental revision of the Kirin-Changchun Railway Loan Agreement and has agreed that if in future China should grant special privileges to any other railways similar privileges should be granted to this line. This is another instance in which Japan has adopted a policy initiated by Germany.

The Hanyehping Company

The original demands in regard to the Hanyehping Company read:—

> **The Governments of Japan and China, seeing that Japanese financiers and the Hanyehping Company have close relations with each other at present, and also desiring that the common interests of the two nations shall be advanced, agree to the following Articles:—**
>
> **a.—The two contracting Powers mutually agree that when the opportune moment arrives the Hanyehping Company shall be made a joint concern of the two nations and they further agree that without the previous consent of Japan, China shall not by her own act dispose of the rights and property of whatsoever nature of the Hanyehping Company, nor cause the said Company to dispose freely of the same.**
>
> **b.—The Chinese Government agrees that all mines in the neighbourhood of those owned by the Hanyehping Company shall not be permitted, without the consent of the said Company, to be worked by other persons outside of the said Company, and further agrees that if it is desired to carry out any undertaking which it is apprehended may directly or indirectly affect the interests of the said Company the consent of the said Company shall first be obtained.**

The career of the Hanyehping Company, which comprises the Hanyang iron works, the Pinghsiang coal mines, and the

Tayeh iron mines, has been somewhat chequered. It has had recurring financial troubles and, influenced by Sheng Kung-pao, who has always been amicably disposed towards the Japanese, it has largely employed Japanese money to assist it over its difficulties. In the first instance a sum of Tls. 5,000,000 was borrowed from a German firm, but this was repaid later on by the Chinese Government. Japan appears to have first come upon the scene in 1902, when a contract was entered into between the Company and the Japanese Imperial Steel Foundry whereby the latter was to be supplied with iron ore from Tayeh for fifteen years. The Company was at this time suffering from insufficiency of funds,and two years after making the contract with the Steel Foundry a sum of Tls. 3,000,000 was borrowed from the Yokohama Specie Bank. Other debts to Japanese concerns were contracted, and by 1912 the total amount outstanding was in the neighbourhood of Tls. 9,000,000. The financial condition of the Company showed no sign of improvement and in 1913 the sum of $15,000,000 Mexican currency was borrowed from the Japanese, who secured the right to appoint advisers and other officials. This is a brief history of the Company, showing how the Japanese have gradually won their way to a position in which they have some voice in the management. It is said that the Japanese have largely to thank Sheng Kung-pao for the hold they have gained over the concern. The shareholders, or a large section of them, have long been desirous of releasing the Company from its financial shackles, or at all events those riveted by Japan, and it was hoped that a sum sufficient to pay off the indebtedness to the Japanese could be borrowed from America or Great Britain. Influence was brought to bear, however, and this project was defeated. There was also some talk of nationalising the Company, but this also fell through.

The preamble of the Hanyehping demands recites that the proposed arrangement is for the "common interests" of China and Japan. It is difficult to conceive what arguments could be advanced to show that China's interests would be served by admitting Japan as a partner in an enterprise of such paramount importance. If it were necessary for China to secure the assistance of another nation in the development of her steel industry it would be clearly advantageous for her to select a nation that had the benefit of long experience and expert knowledge. Without casting any reflection upon the Japanese it cannot be said that they possess the qualifications that would justify China in admitting them to partnership. Moreover, it is evident that the partnership would consist of the Japanese Government on the one hand and a Chinese Company on the other. The control of an industry upon which the greatness of so many countries is based, would assuredly pass into the hands of the Japanese and this is a possibility that no patriotic Chinese could contemplate without alarm. The interests of Japan, which, as is generally known, is badly in need of iron ore owing to the poverty of her own resources in this respect, would undoubtedly be served if she were admitted to partnership—the interests of China would equally as assuredly suffer.

When attention is directed to the second article of the demand it is seem that not only does Japan want to gain control of the Hanyehping Company, but she wishes to prevent any other country from working mines in the provinces in which the Hanyehping properties are situated. The Tayeh mine is in Hupeh and the Pinghsiang coal mine is in Hunan. The expression that is used, "mines in the neighbourhood of those owned by the Hanyehping Company" is comprehensive enough to enable Japan to veto any mining operations in either province. It may be recalled that when the question arose as to the meaning of the term "parallel to the South Manchuria Railway" Japan insisted upon putting her own interpretation upon it, and it may safely be assumed that she would act similarly if any question arose in regard to mines in Hupeh and Hunan. It has to be borne in mind that these provinces, Hunan in particular, are immensely rich in mineral deposits and, with acceptable mining regulations, would present a splendid field for the investment of foreign capital. Japan now proposes to prevent the investment of foreign capital in this part of China. The demand is the more extraordinary in view of Japan's relationship with Great Britain. The alliance between the countries was contracted in order that their interests in the Far East should be protected. Great Britain has admittedly special interests in the Yangtse Valley, yet Japan proposes to render it impossible for British capital to be invested in a most important industry in this region. How can Japan reconcile this demand with her engagements with Great Britain and her often reiterated adherence to the principle of equal opportunity? It must be confessed that all the evidence points to a desire on the part of Japan to secure for herself the sole right to develop the mines of China. She has already secured a monopoly in South Manchuria and Shantung; she is demanding a monopoly in Hunan and Hupeh and Fukien. Even were this not directly opposed to the pledge that Japan has given to maintain the principle of the open door, such a monopoly would be most disastrous for China. Japan has no surplus capital of her own for investment in mining enterprises, and as she would scarcely be able to borrow money from other countries to work mines in China for her own benefit, the result of the monopoly would be that China's mining resources would remain undeveloped. It seems hardly credible that Japan should seriously have presented demands that conflict so directly with the interests of the other Treaty Powers, but the fact that they have been presented remains. China has hitherto declined to take the Hanyehping demands into serious consideration, and it is to be hoped for her own sake as well as that of the Treaty Powers that she will be able to resist the endeavour being made to induce her to become a party to what can only be called an act of political bad faith.

Group Four of the Demands

The Japanese Government and the Chinese Government with the object of effectively protecting the territorial integrity of China agree to the following special Article:

The Chinese Government agrees that no island, port or harbour along the coast shall be ceded or leased to any third Power.

The territorial integrity of China is guaranteed by numerous agreements, to which Japan is a subscriber, notably the Anglo-Japanese Alliance. Its preservation is as much the concern of the Treaty Powers as of Japan, yet she seeks to take the sole responsibility upon herself. The preamble says, in effect, that China's territorial integrity is not effectively protected by the Anglo-Japanese Alliance and other treaties and conventions. It is difficult to find any explanation of Japan's desire to arrogate to herself the duty of safe-guarding China's interests in this respect, other than believing that she wishes to obtain a kind of suzerainty over the Republic. Were the principle of this demand once admitted China would occupy a position similar to that attained by Korea during the Russo-Japanese War, which it will be remembered was far advanced on the road towards annexation. It is not unfair to Japan to recall that she made treaties with Korea for the express purpose of preserving Korea's territorial integrity and independence. The assumption of suzerainty in that case was a step towards annexation. The Chinese may be pardoned if they regard Japan's solicitude for her territorial integrity with decided suspicion. They took the right step in informing Japan that China was willing to make a general declaration that she would not alienate any part of her territory to any nation. That declaration should be amply sufficient if Japan were really anxious to preserve China's territorial integrity and had no ulterior motive in making the demand.

Group Five

We now come to the final group of demands, those which with the second article of the Hanyehping (Group 3) demands were not communicated to the Governments of the other nations interested. These demands were as follow.—

1—**The Chinese Central Government shall employ influential Japanese as advisers in political, financial, and military affairs.**

2—**In the interior of China Japanese shall have the right to ownership of land for the building of Japanese hospitals, churches and schools.**

3.—**Since the Japanese Government and the Chinese Government have had many cases of dispute between the Japanese and Chinese police to settle—cases which cause no inconsiderable misunderstanding—it is for this reason necessary that the police departments of important places (in China) shall be jointly administered (by Japanese and Chinese) or that the (Chinese) police department of these places shall employ numerous Japanese for the purpose of organizing and improving the Chinese Police Service.**

4.—China shall purchase from Japan a fixed ratio of the quantity of munitions of war (say 50% or more), or Japan shall establish in China a jointly worked arsenal, Japanese technical experts to be employed and Japanese material to be purchased.

5.—China agrees to grant to Japan the right of constructing a railway connecting Wuchang with Kiukiang and Nanchang. Also a line between Hanchang and Hangchow, and a line between Nanchang and Chaochow.

6.—China agrees that in the province of Fukien Japan shall have the right to work mines and build railways and to construct harbour works (including dockyard) and in case of employing foreign capital Japan shall be first consulted.

7.—China agrees that Japanese subjects shall have the right to propagate religious doctrines in China.

Though there seems to be little likelihood that China will consent to any of these demands, unless acquiescence be forced from her at the point of the bayonet, they will repay consideration in that they show the scope of Japan's ambitions. While Japan deemed it advisable, after opposition from China and comments by foreign publicists, to withdraw articles 1 and 3 it is still interesting to refer to them. At the present time China employs some Japanese advisers, but the apparent meaning of the first demand set out above was that in political, financial and military affairs Japanese advice only should be taken. If this had been agreed to it would have constituted an acknowledgment that Japan's interests were paramount in China, in fact it would have been practically an admission—which in making them Japan apparently desired—that Japan exercised the rights of a suzerain over the Republic. Japan in presenting the demands apparently thought that the advice of Japanese subjects would be more disinterested than that of European and American advisers, but this opinion is hardly likely to be shared by China and the other nations interested. Theoretically a country that requires advice from foreigners selects them solely for their qualifications, irrespective of their nationality. Actually, however, political considerations have to be taken into account, and the endeavour is made so to distribute the appointments that, while well qualified men are employed, due regard is given to international susceptibilities. Siam is a case in point. In that country American, British, French and German advisers are employed in order to prevent the idea that any one country has an undue voice in the control of the country's affairs. The conditions are similar in China. Many of the advisers of the Central Government are men who, apart from their nationality, have attained pre-eminence in their own particular sphere of activity, but the principle has never been lost sight of that international jealousies are to be avoided. Were China to consent to grant Japan a virtual monopoly in this field she would certainly be called to account by the other nations who consider that they have just as much interest in China's future and welfare as Japan.

If Japanese were allowed to own land for the building of Japanese hospitals, churches and schools in the interior of China, the virus of extra-territoriality would speedily be spread broadcast. No doubt such institutions would do beneficent work, but their directors and staff would be beyond Chinese jurisdiction. The local taxes and imposts need not be paid and in the event of disputes arising with the Chinese residents in the localities where these institutions were situated, they would have to be settled by Japanese Consular representatives. A vista of endless friction and complication would be opened up were this demand to be granted. Bearing in mind that political aspirations are sometimes hidden beneath a cloak of altruism the Chinese regard this proposal with deep distrust. This may also be said of the demand that Japanese subjects should have the right to propagate religious doctrines in China. The Chinese suspect that a political motive lurks behind this anxiety for China's spiritual welfare. Priests are not necessarily politicians, but it has often been found to be the case that political propaganda is undertaken by those of the priestly vocation. China does not want to take any chances. To have a large body of men over whose movements she had no control whatever scattered all over the Republic with wide powers of acquisition of land, would seem to the Chinese to be inviting trouble. The necessity of Japanese propagating Buddhism in China does not seem acute. The Buddhist faith was communicated to Japan through China and evidence is lacking that it has been so improved upon by its Japanese adopters that it is necessary that China should be presented with the new and revised edition.

As Japan has withdrawn the demands in regard to joint control of the Chinese police at certain unspecified "important places" that particular item need not be considered in detail. It is, however, of interest to note that there seems absolutely no just ground for this demand being presented at all. The wording of the demand is vague in the extreme, but it is to be assumed that it ralates to South Manchuria, as that is the only region where Japanese and Chinese police are in close contact—although it might be a closer approximation to accuracy, in view of recent events, to add Shantung. Apparently the main desire of the Japanese Government was to secure an admission from the Chinese that Japan occupies a specially favorable position in China, with the object of putting that admission to its logical use when opportunity offered.

The next demand, relating to munitions, is one of the most important presented to China for acceptance. It is plainly and nakedly a negation of the "Open Door." No amount of ingenious sophistry could divest this proposal of its exclusive character. China is asked to agree to purchase one half, or more, of her requirements in munitions from Japan. Failing that she is to agree to the establishment of a jointly worked arsenal in which Japanese material would be used and Japanese experts employed. This is supposed to be designed to secure uniformity in China's armament, but as the Chinese Minister for Foreign Affairs very pertinently pointed out, China would prefer to select whatever model she might deem to be best. While the Japanese model might be really excellent there were other nations which had had some experience in the manufacture of armaments, and conversations in regard to the establishment of an arsenal had taken place some time ago. This particular demand is looked upon with especial distrust by the Chinese. Not only do they foresee that its acceptance would subject them to recrimination from other Powers, but they fear that there is a deep and sinister design behind the proposal. Were Japanese practice in arms and ammunition to be adopted in China the way would be made easy for a Japanese invasion of the country. Obviously an invading army would find its task simplified if it was sure of securing replenishment of its munitions without bringing them from oversea. The adoption of Japanese practice would certainly be accompanied by the employment of Japanese technical experts in all of China's arsenals. The danger that would arise were hostilities to break out between China and Japan need not be dwelt upon. That uniformity in China's arms and munitions is highly desirable cannot be disputed, but China should certainly preserve a free hand and most emphatically should not bind herself to purchase the bulk of her requirements from any particular country.

Japan undoubtedly has some interests in Fukien, as she many years ago secured a promise from China that no portion of the coastline should be alienated. That was deemed necessary in view of the proximity of the province to the Japanese possession Taiwan, or Formosa, ceded to Japan after the war of 1895. But Japan's special interests begin and end with securing the safety of Taiwan. There is no shadow of justification for the claim that Fukien is a Sphere of Influence. Other countries have rights there, for example France has certain mining concessions. Japan is endeavouring to compel China to close the door in Fukien upon all foreigners other than Japanese. Were China unwise enough to agree to this it may be assumed that when the time was deemed to be ripe Japan would present claims similar to those put forward in regard to South Manchuria. Long leases of the railways would be sought; rights of residence and landownership throughout the province would be demanded. By demanding that she should be first consulted if China wishes to employ foreign capital in Fukien, Japan is seeking to put the province on the same footing as South Manchuria. This is a demand that should be unequivocally rejected by China on the ground that no legitimate reason exists for its presentation.

What Japan can hope to accomplish by pressing the Chinese to grant the fifth article of the fifth group—that for railways from Nanchang to various points—it is difficult to see. Here is a case in which the rights of another Power are deliberately coveted, Count Okuma's dementi notwithstanding. In October,

1914, the Chinese Government offered, in writing, to British capital the construction of a railway from Nanchang to Chaochowfu, and for many months past the representative of Messrs. Pearson and Sons, the great British contractors, have been negotiating with the Ministry of Communications to conclude a contract for the work. So far no agreement has been come to, but the line has been definitely pledged to the British and it is understood that if Messrs. Pearson and Son fail to arrive at an understanding which will enable them to proceed with construction upon terms and conditions with which they are familiar, then some other financiers will take up negotiations. Messrs. Pearson and Son are seeking an agreement permitting them to build the railway upon a percentage contract basis. The Japanese Minister professes that the Japanese approached the Chinese Government as long ago as 1907 for this line, and repeated the request later, but he acknowledged that Japan had received no encouragement from the Chinese, a fact which he attributes to disregard of Japan's wishes and an extension of favourable treatment to Great Britain. It has long been known that Japan has had in view the construction of a railway to connect the Fukien seaboard with Nanchang and Kiukiang on the Yangtse River. Already the line between Kiukiang and Nanchang is being financed mainly with Japanese money and it was only natural that Japan should labour to utilise this railway as a stepping stone to permanent and wider influence over a region of great importance south of the Yangtsze. Always she has been associated with a desire for a railway from Foochow to Nanchang, and it is only very recently that she has dropped the Foochow terminal, the reason being, no doubt, that a reconnaissance by engineers has demonstrated that a railway across the mountain range on the Fukien-Kiangsi borderland is impossible. Although Chaochowfu is in Kwangtung it is just across the frontier of Fukien and a connexion between the railway now in operation between the seaport of Swatow and Chaochowfu and the railway connecting Changchow with the seaport of Amoy would, with an extension further north with Foochow, give Japan a supreme hold upon the coastal railway system. Not only would she dominate in Fukien but she would also have an important port in Kwangtung, for it is obvious that the sea terminal of a railway from Nanchang to Chaochowfu must be the port of Swatow. Of this, however, Japan says nothing in her demands, though it is certain that Japan hopes by some means or other to obtain the opportunity to develop Swatow and bring it under her aegis. This would secure for her a footing in Kwangtung, the importance of which is not to be ignored. It is a matter of great surprise to the Chinese, however, that Japan persists in endeavoring to persuade them to disregard the British claims to the railway, and likewise it is a matter of amazement to British subjects that Japan will publicly profess regard for the interests of other nations and in private conferences do everything possible to over-ride them.

More significant, however, is the demand of Japan for the railway from Nanchang to Hangchow. This railway is definitely committed to the British in an agreement signed on March 31, 1914, as the following articles from the agreement will show:—

Article 2

The loan is designed to provide capital, first:

For the resumption by the Chinese Government of the Anhui Provincial Railway Company's work and property in the neighbourhood of Wuhu; secondly,

For the construction of a Government line of railway from Nanking to Nanchang through Ningkwofu and Hweichowfu, and with connexion to Wuhu and Kuangtechou: and from Nanchang to Pinghsiang, to connect with the existing Government railway from Pinghsiang to Chuchow; thirdly,

For the incorporation of the said Chuchow-Pinghsiang Railway as an integral part of the railway to be constructed under the present loan agreement from Nanking to Pinghsiang. The actual route to be followed between these two points shall be decided by the final survey.

Article 19

A branch line from a point on the main line at or near Hweichowfu, passing through Yu Chien, to Hangchow, and a connecting line from the Nanchang-Pinghsiang section to a point on the Hupei section of the Hukuang Railway, if found by the Chinese Government to be profitable or necessary later on, shall be built by the Chinese Government with funds at their disposal from Chinese sources, and if foreign capital is required preference will be given to the Corporation. The length of such lines shall be determined by the Chinese Government.

Even if foresight had not been exhibited by the signatories of the agreement in including Article 19 the British would have had every reason to object to Japan constructing a railway from Nanchang to Hangchow on the grounds of its parallel nature, adopting, of course, the precedent created by the Japanese when they successfully opposed the construction of the Chinchow-Aigun railway for the reason that it paralleled the South Manchuria Railway. As it is, the lines Japan now demands are committed to British interests, and it is not surprising that the Chinese Minister for Foreign Affairs has so far stoutly declined to discuss them. The repetition of the argument that China should grant the demands and leave it to Japan to come to some compromise with Great Britain is calculated to inspire the strongest language in denunciation. It is a type of diplomacy that is foreign to responsible Western peoples. It is audacious, to use the mildest term, and is certain to compel all serious persons to revise their estimate of the country that protests so constantly its sense of honour and its high motives. We cannot believe otherwise than that the Japanese Government is not cognizant of the character of the arguments adduced by its representative in Peking. That is the most charitable view that can be taken of the situation in this regard. No surprise need be felt by Japan, however, when members of the British House of Commons ask anxious questions on the subject, and when the suspicions of other nationals are aroused as to her intentions.

As for the railway to connect Wuchang with Nanchang, either via Kiukiang or direct, nothing can be said except that Japan here also endeavors to trench upon what have been regarded for many years by Great Britain as her preserver. It was Great Britain that opened the Yangtsze Valley to trade — in fact, broadly speaking, it was Great Britain that opened China to trade—and always that country has claimed distinct privileges of railway development in the Yangtsze Valley. Much British capital has already been invested there in railways, and more is committed for the purpose, and why Japan should go out of her way to force an entry to the region and still expect to receive international sanction to dominance in other provinces is beyond understanding.

A Retrospect and Some Questions

The actions of individuals and of nations are inspired mainly by one of two motives. They do certain things either because they believe that by so doing their material interests will be served, or because they believe that, in accordance with the laws of rectitude, they should be done. The one motive is material, the other moral. It is but seldom that individuals or nations deliberately do anything that they believe to be wrong or improper, unless their moral instincts be perverted. What is the motive animating Japan in pressing these demands upon China? Is she seeking the welfare of her neighbour, or is she simply intent upon gaining vast material advantages for herself? The foregoing analysis of the demands answers the question. Careful consideration of their terms shows that in no one solitary instance are the interests of China served. If the demands were granted in their entirety China would estrange the friendship of all nations other than Japan and would brand herself as lacking in political good faith. Japan is endeavouring to force China to affirm that she has no respect for her treaty engagements. No plea of *force majeure* would avail to save China from the demands for compensation and reparation that would inevitably follow in due time. The fact that acceptance of the demands would entail to China the loss of the good-will of the world shows that Japan was actuated by no sentiment of regard for China. Further their acceptance would render China politically dependent upon Japan, a condition of things that would certainly not be in the interests of the Chinese people. China has hitherto succeeded in preserving her sovereign rights. They have, it is true, been impaired and advantage has been taken of her weakness to compel her to submit to much that has hurt her national pride. But she has remained to a large extent mistress of her own house and this result has been accomplished mainly by sedulously preventing any one Power from gaining a position of paramountcy in the country.

It is sometimes argued that China's historic policy of playing off one Power against another has been detrimental to her interests. From our point of view this policy, which was forced upon her by her weakness, has in reality been the one factor that has preserved China from partition. China has been safeguarded by the mutual fears of the great Powers that the gaining of a preponderating position in China by any one of them would be detrimental to the general interest. Quite possibly concern for China's welfare was a secondary consideration, but the policy of the Powers has reacted favorably on China's interests. Now Japan is openly seeking to destroy this equipoise, and to bring about the very situation that China and the world generally have recognized would be fraught with grave danger.

Japan is seeking to bring back into Far Eastern politics the Spheres of Influence policy. She is claiming South Manchuria, Eastern Inner Mongolia, Shantung and Fukien as exclusive Japanese spheres. The word "exclusive" is not employed in the demands, but it is obvious that if they were granted the effect would be to restrict the development of these regions to Japanese enterprise. The European War will not last for ever and the time would surely come, if Japan succeeded in gaining these spheres, when other Powers would demand compensating advantages, with the result that Chinese sovereignty would disappear. Such a result would be attended with the greatest menace to peace. If Spheres of Influence were recognized in China those who had to content themselves with less valuable spheres would cast covetous eyes upon the richer regions secured by their neighbours. The whole country would be in danger of becoming a battleground upon which quarrels in which China had no interest whatsoever would be determined. No national policy for China would be possible. Each nation would claim the right to veto any proposed railway that might detract from the value of its sphere, however beneficial it might be to the nation. In other directions the power of the Central Government would be shackled by the mutual jealousies of the Powers occupying the respective spheres. Partition would undoubtedly follow.

What is Japan offering China as a *quid pro quo* for the acceptance of her demands? Let us recapitulate what advantages Japan has sought to gain. She has asked for the admission that South Manchuria, Shantung, Fukien, and Eastern Inner Mongolia are Japanese Spheres of Influence. She has asked for confirmation in the possession of her leased territory and railways in South Manchuria for 99 years, and for the control of the Chinese Government Railway between Kirin and Changchun. She has asked for the extension of extra-territoriality over vast regions of China. She has asked for the virtual control of the steel industry in China and a monopoly of mining, not only in the "spheres," but in Hunan and Hupeh. She has asked that China should admit in effect that the Republic is under Japanese protection. She has asked that China should give her a monopoly in the supply of munitions. She has asked that Japanese advisers should supervise political, financial and military affairs in China. There are other demands, but this recital is sufficient. What is China to obtain in return? The Chinese have asked the question and the Japanese have been equal to the occasion. Japanese who are able to speak authoritatively of the designs of their Government have assured the Chinese that the demands are in no way intended to injure China. What is sought is the establishment of a strong community of interests between Japan and China that would result in the eventual elimination of the foreigner in the Far East. The attention of China was directed to the fact that Chinese and Japanese as Asiatics were excluded from America, Canada, Australia and South Africa. With the combined resources of Japan and China it would be possible to retaliate by expelling the foreigner from the Far East. The programme included wresting from foreign hands the Philippines, Australia, Indo-China and India and the smaller foreign possessions in this part of the world. Asked what period of time they considered would be required to achieve these grandiose results the Japanese replied that in seven years they would be in a position, with the aid of China, to carry out the programme in its entirety.

This is the bait that is dangled before the Chinese to reconcile them to the loss of their independence, their national honour and vast material resources. That this explanation of Japan's action has actually been given by Japanese holding responsible positions at the Chinese capital is beyond doubt. Fears that Japan would head an "Asia for the Asiatics" movement were entertained when Japan defeated Russia, but those best informed scouted the idea as ludicrous. It was felt that Japan was sufficiently enlightened to know that co-operation between East and West would make for their mutual advantage, while antagonism would be as disastrous to the one as the other. It is difficult to believe, even now, that Japan seriously thinks that her interests would be served by creating a huge Asiatic Empire from which the foreigner and all his works would be rigidly excluded. Yet a study of the Japanese Press shows that ideas of this kind have been long fermenting, and it is possible that the War Party in Japan cherishes such dreams.

The sober-minded section of the Japanese people should pause and consider the danger surrounding the path in which their rulers are forcing them to tread. Japan is inviting the animosity of the world. The Chinese people are being inspired with a deadly hatred of everything Japanese. Her own ally is amazed at finding that Japan has repudiated her promises and pledges and is openly seeking to impair British interests in China. America is becoming estranged. Can all this make for the ultimate advantage of Japan? Wonderful as her rise has been she cannot afford to earn the ill-will of the whole world. No nation, however rich and powerful, can be a law to itself. Already Japan has wrought herself immense harm, but it is not too late to retrieve in some part her national reputation. Will she have the wisdom and foresight to step back while the Door of Opportunity remains unclosed behind her?

The Conferences.

When the last issue of the FAR EASTERN REVIEW went to press we had brought our record of the conferences held between the Japanese Minister at Peking (Mr. Eki Hioki) and the Chinese Minister of Foreign Affairs (Mr. Lu Cheng-hsiang) up to March 20.

Thirteenth Conference.

The next conference was held on March 23, and, upon opening, the Japanese Minister reintroduced the demand with regard to the Kirin-Changchun railway. It is Article 7 of the second group of the demands and is to the effect that "the control and administration of the Kirin-Changchun Railway shall be handed over to the Japanese Government to take effect on the signing of this agreement, the term to last for 99 years." As was explained in last issue the capital for this railway as originally provided was half Chinese and half Japanese, and this the Chinese agreed to convert wholly into Japanese capital on terms similar to those obtaining with regard to other railways in China. The Japanese objected to this proposal at the outset but ultimately consented to it, and at this conference it was mutually agreed that the line should be leased to Japan for a term of 99 years, as has been done in the case of the South Manchuria Railway, the Antung-Mukden Railway, and the lease of Port Arthur and Dalny, the loan contract to be revised fundamentally in principle. It was also agreed that whenever China should in future grant any special privileges to other railways such privileges should be extended to the Kirin-Changchun railway. This is an application of "the most favored nation" clause to a railway—the precedent for which was set in the contract made by China with the Germans in connexion with the projected railways in Shantung—which is eventually destined to give China considerable difficulty, inasmuch as it is likely to be inserted in all future railway agreements, and perhaps pressed for in regard to existing contracts. That the Chinese have now consented to adopt it with Japan is but another evidence of their readiness to be conciliatory and conclude the negotiations in an amicable spirit. Further discussion ensued upon the question of the right of Japanese to reside and purchase land in South Manchuria; and the mining demands were also touched upon. The Japanese proposed that in Eastern Inner Mongolia and South Manchuria a total of thirteen areas should be allotted to Japanese for mining purposes, but again the Chinese declined to consider Eastern

Inner Mongolia, though they expressed a readiness to accede the nine areas mentioned in South Manchuria. After some discussion on Japan's demand for preference when a loan is propoced, with the local taxes of South Manchuria as security, the Foreign Minister stated that his Government was prepared to grant that; and likewise he stated the Government was agreeable to grant Japanese the preference if it was decided to appoint advisers for political, financial, or military purposes in South Manchuria.

Fourteenth Conference.

On March 25 the discussion on the mining areas was continued but the Chinese would agree to nothing but the granting of the nine areas in South Manchuria, and this item was initialled. The Chinese Foreign Minister took occasion at this conference formally to ask the Japanese Minister the reason for the despatch of troops to China. The Japanese Minister replied that the troops were reliefs for the various Japanese garrisons, but intimated that the time-expired troops would remain until the conclusion of the negotiations. Further brief reference was made to the question of residence in South Manchuria, and then Group 3 of the demands, relating to the Hanyehping Company, was brought up. The Chinese expressed a willingness to agree to the principle of co-operation with the Japanese, but the Japanese Minister was not content with that. Like Oliver Twist he wanted more, and declared the Chinese proposal to be too far from the original demand to be taken as a basis for negotiation. He said, too, that he had certain apprehensions. One was that the Company might be confiscated by the local authorities as had been attempted in 1914; another was that the Central Government might convert the Company into a State-owned concern, and a third was that the Company might borrow money from America with which to pay off the present debts to Japanese. The Chinese Foreign Minister explained that so long as they agreed to the principle of co-operation the Government, pending the performance of the principle, would do none of the things which Mr. Hioki feared. Mr. Hioki endeavored to have the Chinese put this in writing, but the request was refused. Group 4 of the demands, dealing with the non-alienation of any island, port, or harbour on the coast of China to any third power, was introduced. The Chinese Foreign Minister contended that this matter was not a subject for negotiation with Japan but one for action by China on her own volition, and seeing that the Chinese Minister was determined in this attitude Mr. Hioki asked if Japan could be consulted as to the manner in which China would word the declaration to the Powers. The reply was in the negative, and a similar response met the question of Mr. Hioki that Japan should be shown the declaration before it was promulgated The Foreign Minister was not prepared, either, to say whether a copy of the declaration would be specially forwarded to the Japanese Government. What the Japanese Minister was aiming at was that Japan should be regarded by China as being specially concerned in this subject and be a party to it; and the Chinese were equally determined that Japan should not be. No satisfaction being obtainable on the point, Mr. Hioki abandoned it for the nonce and delved into Group 5 of the demands—the group about which the Japanese Government made no mention in their communication to the Powers—bringing forward the demand in regard to the preaching of religious doctrines. Mr. Hioki explained the reasons why rights in this respect which had been enjoyed by Western Powers should be accorded Japan. The Chinese Foreign Minister stated that with China the matter was a question of politics rather than one of religion, as the great majority of the people already believed in Buddhism, and there were thousands of Buddhist temples scattered throughout the country. Another point that had to be considered, urged the Foreign Minister, was that some of the Chinese monks were at present dissatisfied with the Government for controlling the Buddhist property—which was State property—and if China were forced by Japan to grant Japanese, who would enjoy ex-territorial privileges, the right of propagation of Buddhism in China, the Chinese monks might utilise the Japanese for purposes of protection in defying the Government. It was very difficult, the Foreign Minister also pointed out, to distinguish between Chinese and Japanese monks. The Western missionary, on the other hand, had a different standard and mode of life, and always lived separately from the Chinese. The Japanese monks would live with the Chinese, and moreover would bring with them wherever they went extra-territorial rights. Mr. Hioki acknowledged the correctness of this claim, and added that the demand was made not so much with a desire on the part of Japanese to propagate Buddhism but rather because of a sense of injury done them in China's denial to them of privileges to preach that had been accorded Western missionaries for centuries. Even if China should grant the right, added Mr. Hioki, it was not likely that a large number of Japanese would avail themselves of it. One reason why he had to press this demand, he said, was because the monks of Japan expected the right, and Count Okuma had promised before the election to secure it for them.

Fifteenth Conference.

On March 27 Mr. Hioki adduced arguments to persuade the Foreign Minister to agree to the Hanyehping demands, but failed. The Manchurian question was also further discussed but without results.

On March 29 the Chinese Government despatched a note to the Japanese Legation requesting that the time-expired Japanese troops be withdrawn from China in order to enable the minds of the Chinese people to be calmed. Rumours of an exciting nature were at this time circulating broadcast, and there was every indication of difficulties arising. Fortunately the President was able to avert trouble by calling upon the various Governors to take steps to prevent public exhibitions of feeling, and the crisis was safely passed.

Sixteenth Conference.

At the conference on March 30 the Japanese Minister again endeavored to persuade the Foreign Minister to agree to all the twenty-one demands, and in particular to those relating to Manchuria and the Hanyehping Company. He announced that these latter had been sufficiently discussed, and intimated that Japan had no more to say with regard to them. The Japanese Minister had made no attempt to differentiate between the two articles referring to the Hanyehping Company in Group 3 of the demands, and always alluded to the matter as if it were presented in one demand. This attitude the Chinese refused to accept and at no time gave countenance to the second Article, that providing for no competition with the Hanyehping enterprises. Mr. Hioki asked acceptance of Article 2 of Group 5, which demands for Japanese the right of ownership of land for the building of Japanese churches, hospitals and schools in China, but the Foreign Minister refused to discuss it.

Seventeenth Conference.

On April 1 the demand for the right of residence and ownership of land in South Manchuria—the crux of which was the question of jurisdiction—again came up. This time the Chinese gave their fourth revised proposal, in reply to Japan's demands for comparative freedom of action without being amenable to Chinese jurisdiction. China at previous conferences had put forward three counter-proposals. The first was that all civil and criminal cases should be adjudicated by Chinese Courts in the presence of a Japanese Consul or a representative of the Consul. The second was a readiness on the part of China to revise the counter-proposal on the basis of the arrangement made in the Chientao Convention for Korean settlers in the Chientao district, which would give Japanese the right to call for a new trial and new judges if it could be shown that unfair decisions had been come to. They agreed that criminal cases relating to Japanese should be dealt with by Japanese Consuls, but in regard to civil cases it was proposed that Japanese should be tried by a Japanese Consul in addition to the Chinese local authorities. The third was one in which the Chinese were ready to give up criminal jurisdiction. As for civil cases they expressed a willingness that those between Chinese and Japanese, and those involving land disputes or China's interests, should be tried by a Chinese Court. In the fourth counter-proposal China agreed to renounce criminal jurisdiction and civil jurisdiction, except in cases which involved land disputes, which should be tried in Chinese Courts. The last concession was made at this conference, China making it solely with the idea of having the whole matter settled. A memorandum was also presented by the Chinese Foreign Minister giving a history of the various steps of retreat which

the Chinese Government had made on this question of jurisdiction. Mr. Hioki was requested to report to his Government at once and agree to the last proposal. Mr. Hioki then introduced the subject of Buddhism, and the demand for the right to build schools and hospitals, asking if the Chinese Government had any objection to them in principle. The Foreign Minister explained that if the Japanese should desire to build a school in any particular vicinity it should be dealt with locally. Mr. Hioki asked for a memorandum in writing embodying this, but that the Foreign Minister could not see his way to give. In bringing up Article IV of Group 5, dealing with ammunition and arsenals, Mr. Hioki explained that Japan had made her arms and ammunition uniform and urged that China should do the same on the model of Japan. China had, he pointed out, heretofore purchased arms and ammunition from Western countries with consequent confusion. The Foreign Minister admitted the necessity of uniformity, but declared that China wished to adopt what she might consider the best in any country and do so without being hampered by any one.

Eighteenth Conference.

On April 3 four hours were devoted to further discussion of the question of residence in South Manchuria. The Japanese Minister asked to have the term "farming" changed to "agricultural enterprises," when he learned that "farming" did not according to the Chinese interpretation embrace stock raising. He also asked that leases in perpetuity be granted, and stated that the police and tax regulations must be approved by the Japanese Legation before they could be applied to Japanese subjects in South Manchuria. He was anxious to ascertain, too, what taxes the Chinese Government had in mind when it contemplated new regulations, and was told that they would be none other than what would be imposed upon the Chinese. Mr. Hioki laid it down that Japan must be consulted with regard to the regulations to be framed for joint farming, but the Foreign Minister could not admit the necessity of that being done.

Nineteenth Conference.

The conference on April 6 again saw the Japanese Minister return to the charge in the hope of persuading the Chinese to agree to accept in detail the demand for the right of residence in South Manchuria. The Foreign Minister stated that he had done his utmost to meet the Japanese demand and could do no more. He urged the Japanese to accept the modifications which had been tendered. Again Mr. Hioki pressed for the acceptance of the demand regarding the Hanyehping Company, and once again the Foreign Minister stated that China could go no further than to agree to co-operation. Mr. Hioki declared that he had received instructions from Tokyo to close the negotiations in three or four meetings. Three meetings had taken place since then and they were no nearer a settlement.

Twentieth Conference.

On April 8 further discussion of the South Manchurian question led to the Chinese giving way on the point of changing the term "farming" to "agricultural enterprises," but they declined to entertain the Japanese contention that China should submit the regulations to them. Neither could China submit to Japan the police and tax regulations before enforcing them. The Japanese Minister pressed strongly for these, and stated that Japan was prepared to drop the demand for previous approval provided that China would give some sort of safeguard. The question of jurisdiction arose again. In regard to land disputes the Japanese Minister desired to have these settled by a Mixed Court, but discussion was declined on the ground that the matter was one which affected the sovereignty of China. The demand regarding Fukien was introduced, the Japanese Minister endeavoring to secure some definite statement from the Chinese. This was declined, the Foreign Minister repeating that he could not discuss any of the demands in the fifth group. Mr. Hioki made efforts to dissuade the Foreign Minister, saying that because this demand happens to be in the fifth group that was no reason why it should not be discussed. The Foreign Minister repeated that the articles in the fifth group involved China's sovereignty and the treaty rights of other Powers. Mr. Hioki asked again was China determined not to negotiate any of the articles in the fifth group, and the reply was in the negative. He had nothing else to do but state that he would report the fact to his Government. The Foreign Minister intimated that he had tired of discussing the Manchurian question and was extremely anxious to have it settled. China had done her best to meet the wishes of Japan and so far as the counter-proposals made by China were now concerned they had almost assumed the shape of the original demands by Japan. Mr. Hioki replied that he had not received any instructions from Tokyo.

Twenty-first Conference.

At the conference of April 10 the Japanese Minister once more pressed the Chinese to commit themselves to the demand regarding arms and ammunition or the joint working of an arsenal. Mr. Hioki declared that China had been buying a lot of useless munitions from abroad whereas Japan could furnish the best models. As this business is of a commercial nature the Foreign Minister replied that the proper authorities would look into it. He was a diplomat, he said, and knew nothing about arms and ammunition supplies; and, in any event, there was no necessity for the Government to make any agreement in regard to the matter. Mr. Hioki asked what were China's views regarding a joint arsenal, the Foreign Minister replying that as the subject was one connected with national defence he did not feel at liberty to speak of it. Japan, said Mr. Hioki, desired to see China have the best arsenal. The Foreign Minister was of the opinion that the Government would look into the matter to see which country had the best arsenal and therefore it was idle for them to speak about it. Mr. Hioki pressed to have some understanding made with Japan that if the Chinese contemplated any joint operation of arsenals with any one it should be with Japanese. The Foreign Minister declined to commit his country in any way. The demand regarding Fukien, Article VI of the fifth group, was introduced, Mr. Hioki asking for an undertaking in writing that China would not give other Powers, America in particular, any position there. Mr. Hioki impressed upon the Foreign Minister that Japan was determined to secure dominance there, and intimated that there would be no opposition from America at this time since the Diplomatic Party was in power. As the Foreign Minister would not discuss the matter, saying that it may be taken up at some other time, Mr. Hioki dropped the subject, mentioning that he would report it to his Government. For the first time Article V of the fifth group, in which Japan demanded the right to construct railways from Nanchang to Chuchow, to Wuchang and to Hangchow, was brought up for discussion by Mr. Hioki. The Foreign Minister was emphatic in his objection to discussing the matter on the ground that already some of these lines had been given to another Power, and that Treaty rights would be infringed, as well as the question of China's sovereignty. Mr. Hioki replied that Japan may be able to come to an arrangement with the Power in question if the Chinese now grant them the right to construct the railways. He is also said to have stated that so far as the demand affected China's sovereign rights and the Treaty rights of other Powers, other demands could be construed to do a similar thing. The Foreign Minister declined further discussion on the subject, and again asked Mr. Hioki, to conclude the question of South Manchuria. China had done everything, he reiterated, to meet Japan's wishes in every direction and desired the matter now to be closed. Mr. Hioki stated that he had not received any further instructions from Tokyo on the subject.

Twenty-second Conference.

On April 13 Mr. Hioki stated that he had received instructions from Tokyo again to insist that the proposed regulations to govern farming operations and the leasing of land in South Manchuria be drafted in consultation with representatives of Japan, and that the regulations for the police and taxation be submitted to Japan for approval before they are promulgated by China. The Foreign Minister said that he would report the matter to his Government, and expressed regret that Mr. Hioki had not received instructions to settle the Manchurian demands definitely, a thing which the Chinese Government was desirous of doing and had repeatedly requested. The Japanese Minister referred to Group 5 of the demands, the articles of which the

Chinese Foreign Minister declines to discuss but which Mr. Hioki continually brings forward. Mr. Hioki said that he could only consider China's effort to avoid discussion of these demands as disregarding his views, a point which the Foreign Minister declined to admit. Rather, he pointed out, the fullest consideration had been shown Mr. Hioki, more, indeed, than was necessary. Mr. Hioki alluded to the demands of Japan for the railways in Kiangsi Province, those from Nanchang to Chaochowfu, to Hangchow, and to Wuchang, the two former of which have been definitely given to Great Britain. He expressed the opinion that China had accorded favourable treatment to Great Britain and had granted that Power what had been denied Japan. The Japanese Government, he said, considered that to be an act of disrespect and he could not help expressing his disappointment. He declared that the late Mr. Yamaza, Japanese Minister at Peking, had approached the Waichaiopu last year on this question but his representation was not given any consideration. The Foreign Minister pointed out that at that time the Chinese Government had already signed an agreement with Great Britain. Mr. Hioki replied that the Japanese Foreign Office had approached the Chinese Government in 1907 but their note remained unanswered to this day. Mr. Hioki asked for a "yes" or "no" to the demands for these railways, and requested to know if the Chinese refused to discuss the subject on account of the agreement with Great Britain. The Foreign Minister replied in the affirmative, which brought from Mr. Hioki the statement that if China would grant the railways to Japan a compromise could be effected with Great Britain. The Foreign Minister gave a negative reply, stating that definite agreements had been come to.

Twenty-third Conference.

On April 15 Mr. Hioki endeavored to have the question of Eastern Inner Mongolia—which was, in the demands presented by Japan, coupled with South Manchuria, but which the Chinese have so far declined to discuss in that connection—dealt with on terms similar to South Manchuria. The Chinese Foreign Minister expressed the opinion that while the Government might be willing to open several ports of trade in Eastern Inner Mongolia it was not possible to admit that there were any grounds for placing that territory upon the same footing as South Manchuria. He suggested that China might be inclined to consider what could be done in the matter if Japan would definitely withdraw the fifth group of demands. Mr. Hioki said that he had no instructions in that regard and could not say anything till he had instructions, but he asked what Japan might expect if the fifth group of demands was withdrawn. The Foreign Minister mentioned that he was voicing his own thoughts, and would have to receive instructions from his Government before he could further discuss the matter.

Twenty-fourth Conference.

On April 17 the question of China submitting the proposed police and taxation regulations to Japan before they are enforced upon Japanese subjects was revived by Mr. Hioki who said that by police laws Japan meant those laws which defined punishment and penalties. With regard to Eastern Inner Mongolia Mr. Hioki asked what China would do, the Chinese Minister of Foreign Affairs replying that his Government could not see its way clear to do any more than to promise to open certain places to foreign trade. The country was not developed to any extent nor was the country very quiet and it would be unwise to force an entry into the region. Mr. Hioki reiterated the nature of Japan's view of the demands connected with Eastern Inner Mongolia and said that his Government was determined that its view should be maintained. He was sorry that he and the Minister of Foreign Affairs could not come to a compromise on the matter and suggested that if that remained impossible some unpleasantness might result. Mr. Hioki referred to the Hanyehping demands. The Chinese counter-proposal, he said, referred only to the first article, but he wished to speak of the second one. The Foreign Minister said that the Chinese counter-proposal covered both articles. The Government could agree to co-operation in working the Hanyehping enterprises, but nothing could be done unless the Hanyehping Company approved it, so the Government could do nothing further. With regard to the demand for railways, Mr. Hioki said that he and his Government were exchanging telegrams on the subject and when his instructions arrived he would inform the Chinese when the next conference would take place.

MODEL ABATTOIR IN TSINGTAU

It is doubtful if in any city in the world the slaughtering of cattle for consumption is conducted under more sanitary and painstaking auspices than in Tsingtau. One can with perfect confidence eat the meat bought from the slaughtering plant, for every head is killed and prepared for the market under the personal supervision of a German qualified to act in that capacity. Soon after the occupation of Kiaochow by the Germans the necessity for the establishment of an abattoir along hygienic lines became apparent. The German Reichstag appropriated money to build the institution, which was done under the control and supervision of competent veterinarians, and it stands to-day a model of its kind in the Far East on a site far removed from the dwelling part of the city and close to the sea. The city's electric-power station and the tallow and hide warehouse of an American firm are its only neighbors. The refuse is carried direct to the sea, and the odors never penetrate the city.

An "administration house" is occupied by the chief veterinarian; his assistants in bacteriological work are located in an up-to-date laboratory. The slaughterhouse itself consists of a large, clean, tiled room for killing cattle and another of the same for slaughtering smaller animals. Adjoining, there is a place for housing cattle pending an examination as to their condition, as well as space for housing and killing diseased cattle, there being a special entrance to the latter to avoid contamination. There are also a crematory for dead animals and cold-storage plants. The place is well ventilated and electrically lighted throughout.

CROSSBREEDING—BACTERIOLOGICAL RESEARCH—PRICES

While it is the duty of the chief veterinarian and his assistants to personally inspect all meat and to see that nothing issues from the plant without the Government seal thereon that is the guaranty of its purity, they also endeavor by crossbreeding with prize German stock to increase the milk production of the Shantung cattle. Bulls and cows of the Friesian breed are imported, and it is confidently expected that after the third generation the Shantung cows, now giving but 3 or 4 quarts of milk, will yield at least 15 quarts. The same experiments are being made with hogs, goats, pigs, and sheep, and with the German crossbreed a vast improvement is now noticeable. Only white pigs are being slaughtered for the foreign consumption.

The chemical laboratory is equipped with all modern appliances for the complete testing of meats and milk and for the manufacture of certain serums, and cultures of bacteria of the various animal diseases are kept, with the usual number of guinea pigs, chickens, pigeons, white mice, etc., for experimental purposes. A rinderpest serum manufactured in this laboratory has been proved very effective. An army veterinarian has been detailed to this laboratory by the Government for research work.

The average monthly slaughter for local consumption amounts to 410 head of cattle, 715 hogs, 180 sheep, and 200 calves. While the price of meat varies with the nationality of the dealer it is precisely the same meat and must bear the Government stamps.

THE SZECHUAN CONCESSION

The directors of the Eastern Pioneer Company, Ltd., announce that after nearly twelve months' negotiation they have just completed a contract between the Company and a financial group consisting of S. Pearson and Son, Ltd., The Central Mining, and the British and Chinese Corporation, Ltd., by which the financial group take over the control and administration of the company's rights and interests in the Province of Szechuan. The directors add that full details of the contract cannot be embodied in a circular, but that they will take the earliest opportunity available to give such further information as in the shareholders' interests should be published. It might be explained that the Eastern Pioneer Company held the right obtained under what was known as the Pritchard Morgan Concession, the full history of which was given in the FAR EASTERN REVIEW of June, 1914.

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THE GOOSE AND THE GOLDEN EGG

The excellent results so far attained by the reorganization of the Salt Administration of China have stirred the cupidity of several provincial officials, and a movement is afoot in quarters to persuade the President to order a further increase of the salt tax. It is reported, too, that the present acting Minister of Finance, Mr. Chou Hsueh-hsi, is inclined to favour the proposals of the provincial officials. We sincerely trust that rumour, in this respect, is the lying jade she is often credited with being, and if she is not it is to be hoped that wiser councils will prevail and this suggested interference with the plans of Sir Richard Dane and Mr. Chang Hu, the Co-Chief Inspectors, will be prevented. When Mr. Chow Tze chi was Minister of Finance, and ex-officio Head of the Central Salt Administration, a movement by certain provincial governors to inspire an enhancement of salt taxation was firmly nipped in the bud. The Governors then active were, principally, those of Fengtien, Hunan and Shensi. They individually memorialised for an increase in order that, as one of them put it, "several tens of millions of dollars may be collected;" and, as another put it, that an increase of about $50,000,000 might be available "to multiply the bank notes issued by the Bank of China to twice the present, and thus stimulate the circulation of the money market." Another proposal was for an increase of the salt tax to replace a reduction of the duties on merchandise in Kiangsu and Chekiang Provinces. These proposals were handed to the Ministry of Finance and the Central Salt Administration for consideration, and very properly were frigidly rejected, the Memorandum of the then Minister of Finance to the President (which was published in the *Government Gazette* of February 28th, 1915) suggesting that the petitioning Governors and Finance Commissioners "be ordered to open up locally other sources of revenue than that of salt. . . . and be informed that funds already arranged for by the Central Government must not be brought up for discussion again, so that they cannot resort to empty talk which will result in nothing." The Memorandum also curtly announced that the Finance Ministry and the Central Salt Administration were in charge of the general direction of salt affairs and therefore the responsibility of enchancing the rate of tax and of increasing its collections could be "shifted to nobody else." It pointed out, further, that "when the reorganization of the salt works had made some progress; when the smuggling of salt had been stopped, and when the quantities marketed were flourishing they would certainly investigate the conditions of the various districts and from time to time consider the enhancement of the rate of the salt tax to be collected in order to supply the financial needs of the Government."

At the period when this Memorandum was written the Minister of Finance and the Central Salt Administration had no intention of permitting any indiscriminate interference with salt taxation, and it is interesting to note that the President concurred in the principle, his rescript to the Memorandum being, "Let the said Ministry and the Yen Wu Shu (Central Salt Administration) inform the Governors accordingly." The officials who now propose an increase of the salt tax, believe, of course, that the consumers can sustain the burden and that the finances of the Central Government will, therefore, without difficulty, be further enhanced. We believe the theory to be faulty. In the regulations published at the end of 1913 dividing the country into areas it was laid down that the tax should be $2.50 per picul. That amount has now been reached in Shantung, Kwangtung, parts of Chekiang, Chihli, and Honan. In Shansi and Manchuria it has been raised to $2. In the four Yangtsze Provinces, where the old *yin* system exists, the taxation is far higher than this, amounting to Taels 3, ($4.50) per picul, one tael of which will in future be collected in advance before the salt leaves the depot where it is stored for issue to the trade, and the remaining two taels after the salt has been sold by the sale office appointed by the Government. In Yunnan also the taxation on salt is already enormous, amounting to $4 per picul and often over in places. In Szechuan, where owing mainly to the disturbed state of the Province reorganization has not yet been undertaken, the duties are lower than they are in other places, but, as in Yunnan, the cost of production of the salt, which is made from well brine, is very high.

This, briefly, is the state in the country to-day, and it is a state that was gradually being adjusted by Sir Richard Dane and Mr. Chang Hu. It would therefore be regretable if their programme should be disturbed by any ill-advised, though well meant, attempt to gather in more revenue by the imposition of any further burden upon the consumer. One of the evils that would arise immediately taxation became too oppressive would be a marked increase in smuggling. The preventive force of the Government is so far inadequate to cope with any development of smuggling, and it is not likely to become efficient unless supervised by experienced foreigners. At present that is impossible, the terms of the Reorganization Loan Agreement precluding foreigners from taking part in the control of a preventive service. Not only would the raising of the tax place a premium upon smuggling but the incidence of such a step would be that a certain number of very poor people would be compelled to forego the use of salt altogether or consume very much less than would be sufficient for their natural requirements. We fear the effect of greater taxation on the poor has been overlooked by these officials who advocate an increase, and we trust that the fullest consideration will be given any measure which might be oppressive. The revenue from salt has been enhanced, so far, only by the methodical employment of the experience and knowledge of experts, and if the zeal of enthusiastic but short-sighted provincial officials is permitted to sway in the councils of those who have the power to increase taxation then we are very apt to witness a repetition of the oft-repeated misguided slaughter of the goose that lays the golden egg.

The present acting Minister of Finance is an official with knowledge of business, with experience of the ways of the salt merchants, and with some understanding of the working of the salt administration under the Manchu regime. He is said to be long-headed and to be firm, and with these attributes it is difficult to believe that he will be short-sighted. It is sincerely to be hoped that he will co-operate with Sir Richard Dane and Mr. Chang Hu—than whom China has no more loyal or hard-working servants, and none who inspire greater confidence—in the enforcement of other reforms. A modification of, or a total abolition of the Government transportation and merchant transportation systems, and the inducement of Salt Commissioners to be amenable to existing orders and regulations will produce more additional revenue than an enhanced tax at this juncture, and in this sphere the Minister has considerable and far-reaching work at hand. The gratifying and, indeed, surprising collections made last year were not the result of the waving by Sir Richard Dane and Mr. Chang Hu of some magic wand. The money was there, and has been there, and the Co-Chief Inspectors simply knew the methods to adopt to extract some of it from the privileged merchants and salt commissioners who, from time immemorial, have retained it for the upkeep of their costly establishments. They also know how to get more of it, but to do that tact, firmness, and patience will be required, and in addition they must have the whole hearted support of the Central Government. All well-wishers of China earnestly hope, and look forward to, a continuance of the excellent work so far carried out by Sir Richard Dane and Mr. Chang Hu. This, combined with serious and skilful reform of the Land Tax, referred to elsewhere in this issue, may well mean the salvation of China.

CHINA'S NEW DOMESTIC LOAN

A most important advance in the furnishing of finances for China's administrative needs was made this month when the Government of the Republic entered into an arrangement with the Hongkong and Shanghai Banking Corporation—the foremost foreign financial organization in the Far East—to assist in the flotation of an internal, or domestic, loan of $24,000,000, issued at 90 per cent, and bearing interest at the rate of 6% per annum. Last year the Government successfully issued a similar loan, the interest being handed to the Inspector-General of Customs for deposit in nominated banks. The Hongkong and Shanghai Banking Corporation was not connected with that loan, but subsequent negotiations with the Government led to the Corporation agreeing to participate with the Bank of China and the Bank of Communications in making the new issue. This co-operation with the Government of the greatest British banking establishment in this part of the world is pregnant with far-reaching results. Not only will it assist in the development of a greater confidence in the Chinese banks with which it is associated, but it will do considerable to remove from the minds of the Chinese people themselves the doubts they have always entertained regarding the value of bonds issued by their own Government. That, of course, is the prime object of its participation. In the days of the old Manchu regime Chinese investors had every reason to be wary of dealing with domestic issues. Money invested with the Government in those impecunious and uncertain days went never, or seldom, to return, with the eventual result that instead of employing their capital in their own concerns Chinese mostly banked with foreign institutions in the Treaty Ports, or invested their money in enterprises conducted by foreigners.

It has long been known that Chinese have held millions of dollars idle in foreign banks while the Government went begging abroad for financial assistance. How to inspire confidence in the minds of the Chinese capitalists so as to induce them to circulate their idle wealth in the interests of their country is a problem that has frequently floored the crabbed intellects of the monarchic period. Cajolery and coercion have alike failed. Nor is that surprising. Officialdom has, in the past, been so closely associated with legalised highway robbery, and the depredations have been so many, so barefaced, so persistent, and so crude that it is only natural that all owners of even limited wealth either hid it or took it to some Treaty Port for safekeeping. Happily that condition is gradually being changed. The present regime has made great efforts to demonstrate that it intends to stand by its obligations, and the response so far has been decidedly encouraging. The recent redemption of 8 per cent military bonds issued during the Revolution was such an unusual and unexpected occurrence that bond holders and the Chinese public at large gasped with sheer astonishment. They had hardly recovered from that physical shock when the second domestic loan was announced with the direct inducement of a leading foreign bank guarantee of the interest and principal. As the interest of the first domestic loan is paid and the bonds redeemed so will confidence gradually be built up in the present administration, and when public confidence is restored and citizens are induced to employ their hoarded wealth in the affairs of the country of their origin then most of China's financial difficulties should diminish into mere local affairs instead of looming large, as they do now, as international concerns. It was a happy thought which devised the scheme for the recent domestic loan. It is said that it matured in the mind of a banker whose institution does not figure in the scheme as applied. If that is so and the measure largely rehabilitates Chinese national finance, as there is every likelihood of it doing, the Government is under a debt of gratitude to that banker, which it should lose no time in paying.

The principal feature of the loan is that the Ministry of Finance (according to Article V of the Regulations) is to raise the full amount of $1,440,000, which is the amount of interest on the loan for one year, and hand it to the Inspector-General of Customs to be deposited by him in his name in the Bank of China and the Bank of Communications, to be permanently deposited there as a guaranty for the interest. Besides this sum the Ministry of Finance is also to appropriate every month a sum of $120,000 and hand it to the Inspector-General of Customs to be deposited by him in Loan Service Accounts in the above mentioned banks for the payment of interest on the due dates. This money is to provide for the interest as it falls due, and the principal is to be secured in a similar manner, Article VI of the Regulations stipulating that beginning from the third year, the funds for the repayment of principal of the loan shall be appropriated and deposited as arranged for the interest.

These provisions are the safeguards to demonstrate to the pardonably nervous Chinese that their capital will be amply protected, and likewise they will constitute sufficient guarantee to foreigners resident in China, or abroad for that matter, that any investments in bonds that they might make will be carefully

secured. The association of the Hongkong and Shanghai Banking Corporation with the scheme is sufficient in itself to remove any of the doubts which in the past used to assail those tempted to deal with purely Government financial measures, but in addition the public now has earnest of the good intentions of the Government itself to safeguard the interests of the general public. Once the Government can conclusively show that the tricks of the past have been relegated to the limbo of obsolete and forgotten practices, its dealings with its own people will need no bolstering by foreign institutions, and there is abundant evidence to show that the President is setting his mind to the task of accomplishing this desideratum. It will do more than anything else to put the country upon its feet.

As a matter of record as well as of interest we give herewith the prospectus and the Regulations governing the loan as published by the Government. Subscription Lists were opened on April 12, 1915, to be closed on or before May 12, 1915:—

Prospectus

CHINESE GOVERNMENT 6% INTERNAL LOAN OF 1915

Under the regulations annexed hereto, as authorised by Presidential Mandate dated the 9th day of the 2nd month of the 4th year of the Republic of China, corresponding to the same day and month of 1915.

$24,000,000, Peiyang and New Republican Dollars.

The above loan of $24,000,000, is now offered to the public for subscription in China, Straits Settlements, Philippines, Java, etc., in bonds to bearer of $10,000, $1,000 $100, $10, $5, (with coupons attached), bearing interest at the rate of 6% per annum; interest payable half yearly on the 12th October and 12th April in each year. The first coupon for a full 6 months' interest will be payable on the 12th October, 1915.

Repayable in 8 years in six annual instalments commencing with the third year in accordance with the amounts and dates of the amortisation table attached.

Drawings will take place on the 15th February in each year commencing 15th. February, 1918, and the drawn bonds will be due for payment on the 12th April following.

Bonds and coupons are exempt from all Chinese taxes and imposts.

The Hongkong and Shanghai Banking Corporation, The Bank of China, and The Bank of Communications having been designated by the Chinese Government to be issuing banks are now prepared to receive subscriptions for the loan.

The price of subscription is 90%, payable as follows:—

10% on application; 30% on allotment; 50% on 28th June, 1915.

Applications must be made on the enclosed form, accompanied by the deposit of 10 per cent.

If no allotment is made the deposit paid on application will be returned in full, and if only a portion of the amount applied for be allotted, the balance of the deposit will be appropriated towards payment of the amount due on Allotment.

Failure to pay any of the instalments at due dates will render all previous payments liable to forfeiture.

Scrip certificates to bearer in respect of the loan bonds will be issued against allotment letters; and bonds, printed in Chinese and English, signed and sealed by the Minister of Finance and the Comptroller-General of the Bureau of National Loans will be delivered in exchange for Scrip Certificates, when ready, as soon as possible after the 28th day of the 6th month (28th June) 1915.

Prospectuses and Forms of Application may be obtained from any of the Offices of the Hongkong and Shanghai Banking Corporation, The Bank of China and the Bank of Communications.

Peking, 8th April, 1915.

REGULATIONS OF THE DOMESTIC LOAN OF THE FOURTH YEAR OF THE REPUBLIC OF CHINA

Art. 1.—The government issue this loan for the purpose of adjusting the old debts and increasing the funds of the National Treasury. The authorised amount of this loan shall be twenty-four million dollars ($24,000,000).

Art. 2.—The rate of interest of this Loan shall be six per cent per annum (6%.).

Art. 3.—The interest of this Loan shall be paid half yearly on the 12th day of April and the 12th day of October of each year.

Art. 4.—During the first two years following the date of issue of this Loan, only the interest thereon shall be paid: commencing from the third year, the amount of redemption to be made each year in accordance with the schedule of repayment to be hereto attached, shall be effected by the drawing of bonds and the entire amount of this loan shall be redeemed in the eighth year. The above mentioned drawing of bonds shall take place at Peking, on the 15th day of February of each year.

Art. 5.—The Ministry of Finance shall raise the full amount of one million four hundred and forty thousand dollars ($1,440,000.), which is the amount of interest on this Loan for one year, and shall hand it over to the Inspector General of Customs to be deposited by him in his name in the Bank of China and the Bank of Communications, to be permanently deposited there as a guaranty for the interest. Besides this sum, the Ministry of Finance shall likewise appropriate every month a sum of one hundred and twenty thousand dollars ($120,000) and shall hand it over to the Inspector General of Customs to be by him deposited in Loan Service Accounts in the above two banks for the payment of interest on due dates.

Art. 6.—Beginning from the third year, the funds for the repayment of principal of this Loan, shall be appropriated and deposited in the same manner as stated in Article 5.

Art. 7.—This entire Loan is secured, in respect to the repayments of principal and payments of interest, by the unconditional guarantee of the Chinese Government and by a first charge on the unpledged revenues of the Native Customs of the Republic, specified below, and the Revenue from Likin of the whole Province of Shansi.

The amount of the above mentioned revenues is as follows:

a.	The Yang Yiu Native Customs of Kiang Su, yearly receipt	$470,000
b.	The Native Customs in Amoy, Min-an, Chu-chi, Hung Tang, Chung An, Pu Cheng, Kuan Tse, Shang Hang, Peiling, yearly receipts	$360,000
c.	The Native Customs in Wenchow, Hsun Chow, total annual receipts	$232,000
d.	The Native Customs in Hai Nan and Swatow, total annual receipts	$530,000
	Total annual receipts	
e.	The Native Customs in Ching Chow	
	„ „ „ „ Wu Chang	$700,000
	„ „ „ „ Han Yang	
f.	„ „ „ „ Kiang Si	
	„ „ „ „ Chen Chow	
	receipts	$348,000
	„ „ „ „ Pao Ching	
	„ „ „ „ Tung Kuan	
g.	„ „ „ „ Kuei Kuan	
	„ „ „ „ Cheng Tu	
	„ „ „ „ Ning Yuan	
	receipts	$420,000
	„ „ „ „ Yung Ning	
	„ „ „ „ Yeh Chow	
	„ „ „ „ Kuang Yuan	
	„ „ „ „ Ta Chien Lu	
h.	„ „ „ „ Tai Ping Kuan	$300,000
i.	„ „ „ „ Kalgan	$540,000
j.	Total Likin revenue in Shan-si yearly receipt	$1,000,000
		$4,900,000

Art. 8.—The repayments of principal and the payments of interest of this Loan shall be made by the Head and Branch Offices of the Bank of China and the Bank of Communications, the foreign bank or banks entrusted in that capacity by the Government, substantial native banks and the Maritime Customs Houses.

Art. 9.—The Bonds of this Loan shall be issued at ninety per cent (90%) of the nominal value.

Art. 10.—The Bonds of this Loan shall be Bearer bonds. In case the subscribers request the affixing of their names on them, their requests may be complied with.

Art. 11.—The Bonds of this Loan shall be of the following five denominations:—

1.	$10,000	each
2.	1,000	„
3.	100	„
4.	10	„
5.	5	„

Art. 12.—The above Bonds when they are due for the repayment of principal and their matured coupons can be used as cash in payment of Government Taxes and duties, other than Maritime Customs duties, and for other purposes as ready cash.

Art. 13.—The above Bonds can be used as guaranty fund or the fiduciary reserve of banks.

Art. 14.—The above Bonds can be bought, sold, mortgaged or used as security in case where a guaranty fund is required in the public service.

Art 15.—All officials and other persons concerned in the transactions of the above Bonds, who by any action injure the credit of the same, shall be liable to punishment in accordance with the regulations relating to the injury inflicted upon the credit of Internal Loans.

Art. 16.—Fifteen days prior to the date of repayment of principal or payment of interest of this Loan, the Ministry of Finance shall petition the President to appoint two Censors and two Auditors of the Board of Audit, who shall proceed to the Bureau of Domestic Loans, the Bank of China and the Bank of Communications to inspect the accounts and fund for the repayment of principal and payments of interest of this Loan. The Censors, the Auditors of the Board of Audit, and the authorities of the Ministry of Finance shall also jointly superintend the drawing of bonds for redemption.

SCHEDULE OF INTEREST AND AMORTISATION

Year.	Interest	Repayments of Capital.	Balance of Loan outstanding.
1.	1,440,000	....	24,000,000
2.	1,440,000	....	24,000,000
3.	1,440,000	3,460,000	20,540,000
4.	1,232,400	3,667,000	16,873,000
5.	1,012,380	3,887,000	12,986,000
6.	779,160	4,120,000	8,866,000
7.	531,960	4,368,000	4,498,000
8.	269,880	4,498,000	nil.

CHINA'S MOST INTERESTING RAILWAY

With the recent opening of the railway to Tatung, through traffic has been made possible between stations on the Chinese northern railways and this distant city in Shansi, and the authorities of the Peking-Kalgan railway and the Tientsin-Mukden railway have now arranged for through trains to run from Fengtai to Tatung and vice versa. Passengers from Tientsin will be able to book right through, and will take the Tatung train at the Fengtai junction. A train leaves there every day at 10:35 in the morning, and reaches Kalgan at 5:43 in the afternoon. Passengers will stay over night at Kalgan, and will leave the following morning at 8:30 for Tatung, arriving there at 3:10 in the afternoon. For the return journey the train leaves Tatung at 8:50 in the morning and arrives at Kalgan at 3:30 p.m. The following morning the train leaves for Fengtai at 7 p.m. and arrives at Fengtai at 1:54 p.m.

In the FAR EASTERN REVIEW of August, 1913, we published a description of this railway. The final section was then in course of construction. That is now completed, and the line is being pushed on still further. Tourists travelling with a desire to see the country will find the journey over this railway one of the most interesting and picturesque in China. The railway climbs up the famous Nankow Pass, where the Great Wall of China is strikingly in evidence, to the plateau, when it traverses interesting country to Kalgan. Thence river valleys are followed, and mountain ridges skirted to Tatung, walled cities, further lengthy sections of the Great Wall, and rolling country being greatly in evidence. There is none of the monotony of great plains that is so conspicuous a feature of the eastern section of China. Here are the mountains with the variation which mountainous country affords.

THE HWAI RIVER CONSERVANCY

In this issue we publish the full report of the Commission which was despatched by the American National Red Cross to report upon the feasibility of conquering the flood propensities of the Hwai River. Colonel Siebert and his staff of engineers made a careful investigation of the affected territory and conclude that the necessary work can be carried out not only to avert floods but also to reclaim a large and rich area of country. Colonel Siebert's report has been delivered to the American National Red Cross and there active work ends for the nonce. The great war in Europe has interrupted this engineering scheme as it has interfered with many other propositions where finances are required throughout the world, and it is felt in certain quarters in America that it will be some time after the conclusion of the war before money will be available for what is regarded as a purely philanthropic work when there will be such a large demand for money for essential reconstruction purposes in Europe. In order to give the American National Red Cross an opportunity to complete the task upon which it has already spent considerable money, the Chinese Government recently extended the option granted on January 13, 1914, for another year. This option gave the American National Red Cross a year in which to prepare and effect a Hwai River Conservancy Loan. The amount of the "loan is set down in the option agreement at $20,000,000 or such sum as may be found necessary, after complete surveys have been made, to carry out the work of improving the water courses embraced in the Hwai River district . . . and the Hungtzu Lake, together with the contemplated outlets to the sea and the Yangtsze River." The agreement provided also that the loan should bear interest at the rate of five per cent per annum, the price of issue of the bonds to the public to be fixed according to the most favorable market price of other Chinese bonds. The agreement further stipulated that the work should be carried out under a percentage contract by an approved construction company, and in the early stages the name of Messrs. J. G. White and Company, of New York, was connected with the proposition. Considerable interest was exhibited in the scheme in America and before the European war broke out it was stated that the capital necessary was practically available. Such is not the case now, though the American National Red Cross is hopeful that the money will be forthcoming in due course. Everything, naturally, depends upon the duration of the war. In the meantime negotiations are proceeding, and pending the decision of the Red Cross the Chinese Government, through the Conservancy Board, is making further investigations and collecting data in the Hwai River region, the possession of which will be valuable and expedite work if it is eventually undertaken on the scale originally contemplated.

SHANTUNG CATTLE EXPORT

An American firm was engaged at Tsingtau in exporting cattle to Vladivostok. The representative of this firm entered the interior of the province and purchased cattle directly from the Chinese owners, or in the regular market towns, where all kinds of produce are exposed for sale at regular periods of five days. Exports to the Philippine Islands were formerly made from Shantung, but, owing to the prevalence of anthrax and other cattle diseases, the importation into the islands was prohibited.

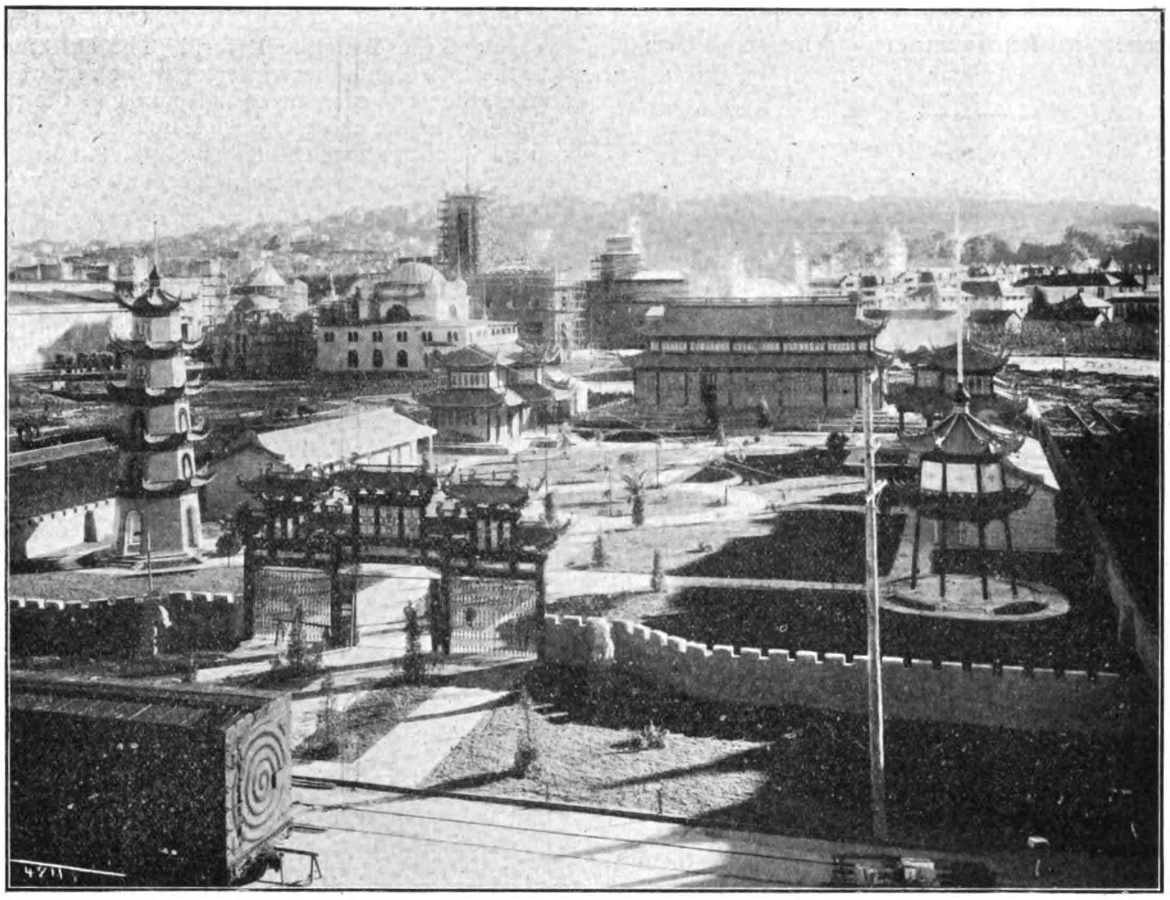
As cattle are not grown in China to any great extent, there are no large cattle ranches, each small farmer raising such stock as he may himself need. Cows are not used for milk by the Chinese people, but are yoked with oxen, or with any other available animal, and used in cultivating the fields. Foreign buyers can afford to pay prices which appeal to the owners of cattle.

In a few places in the province, especially those towns where Occidentals are living, the Chinese raise cows for milking purposes, and even the better-class natives are taking kindly to the use of milk. It is the fear of typhoid germs in the milk that makes the sale of the tinned products so large among the foreign population of China.

Efforts have been made to introduce German cattle in Tsingtau, but without success. The local cattle are apparently more or less immune from the effect of anthrax and other diseases, as they continue living and thriving even with these diseases prevalent about them. Foreign cattle, however, die almost immediately. A few years ago the German Government brought out a dozen of the finest breeds of German cows, but within two weeks after arrival they had all died. Doctor Martini, a German bacteriologist, for many years chief assistant to Doctor Koch, was sent out to investigate the cattle diseases, and endeavor to eradicate them within the German territory. So far as he can discover the prevalence of anthrax has been greatly exaggerated, although undoubtedly other cattle diseases exist.

There were shipped through the port of Tsingtau from central Shantung during the year 1913, upwards of 93,000 quarters of dressed beef, the bulk of which was destined to Vladivostok for the use of the Russian Army. Two thousand to three thousand head of cattle a month are being shipped from Tsinanfu via Tsingtau to Vladivostok for this purpose. These cattle weigh 800 to 900 pounds each and sell for about 3 cents a pound on the hoof. It costs $20 U. S. currency per carload of 15 head to ship them from Tsinanfu to Tsingtau, where they may be loaded upon steamers which come alongside piers.

The Chinese populace eat little or no beef, with the exception of the Mohammedans, considerable numbers of whom live in Shantung. Tsinanfu appears to be the center of the export trade in cattle for Shantung and southern Chihli.



General View of China's Enclosure and Buildings at Panama Pacific Exposition.

CHINA AT THE PANAMA EXPOSITION

The Chinese Government Pavilions at the Panama Exposition were formally opened at 2 o'clock on the afternoon of March 9, when dedicatory ceremonies, strongly tinged with Oriental ideas, were held. Kee Owyang, Commissioner and Director of Foreign Affairs, presided. Commissioner-General Chen Chi and Consul-General S. C. Shu gave addresses for China, while appropriate responses were made by Exposition officials.

A feature of the ceremonies was the singing of American songs by Chinese students. There also took part the pupils of two Chinese grammar schools, the older girls of the Chinese high school and Chinese students at the University of California. Included in the choral numbers were "The Star-Spangled Banner," "Hail Columbia" and other patriotic songs. Orchestral selections were furnished by Orchestra of the Chinese Six Companies.

The Chinese pavilions represent palaces in the Forbidden City of Peking, where for centuries the rulers of China have presided. There are three of these miniature palaces, including the great hall of Tai Ho Tien, or "Hall of Eternal Peace," where the late Empress Dowager received the foreign ambassadors and highest dignitaries of state in audience. This hall is now in the possession of the Republican Government, which has changed its name to Li Tang, or "Temple of Ceremonies."

The three palaces are true representatives of the buildings in the Forbidden City and are unique among the structures at the Exposition. The interiors are also true replicas of the ancient structures, where princes of the royal blood have lived for many years. Likewise the furnishings are truly Oriental and copied as near as possible from those in the great structures in the faraway Forbidden City.

There are large and small screens, wooden carvings and silken draperies; porcelain and old scrolls and pictures, a true representation of the best artistry work for which the Chinese have been known for centuries.

The central pavilion possesses some exquisite black teak wood furniture carved in the so-called Canton fashion. The seats of the chairs are of stone and there are inlaid porcelain decorations. The two other buildings also are furnished with different kinds of inlaid and carved wooden furniture, such as are only made in Ningpo and Peking.

In the centre of the main building are pictures of the President and Vice-President of this youngest of all the republics, His Excellency Yuan Shih-kai and Li Yuan-hung, who conquered the forces of the old rulers and who were the actual military chiefs of the revolutionary forces in 1911 when the revolution commenced. It was this revolution that resulted in the oldest and most conservative nation of the world throwing aside its monarchial government centuries old and suddenly becoming a democratic nation under a republican government. There is also an enlarged photograph of the present Secretary of State, Hsu Shih-chang, who under the last dynasty was grand councillor and tutor of the young Emperor.

Preceding the formal dedicatory ceremonies a luncheon was given by President Moore of the Exposition in honour of Chen Chi, Commissioner-General for China.—*Peking Gazette.*

It was a curiously mixed throng, says a San Francisco paper, at the dedication exercises, and included Chinese of high and low degree, state, foreign and exposition officials, and a great crowd of people of all nations who were interested in seeing the formal opening of the buildings of the Celestial republic.

Peace, and the peaceful part China has played in the world's progress, was the keynote of nearly all the speakers at the exercises. These included Commissioner Kee Owyang, Commissioner-General Chen Chi, Vice-President of the Exposition R. B. Hale, Consul-General S. C. Shu, William B Lamar,

Hall where Opening Day Ceremonies Took Place.

Five Story Pagoda with Bell-hung Eaves.

chairman of the United States Commission to the exposition; Mayor James Rolph and Chester Rowell, representing Governor Hiram W. Johnson.

The ceremonies opened with a selection by the Chinese band, after which Commissioner Kee Owyang, who acted as chairman, spoke.

"This," declared the Commissioner, "is our response to the invitation extended us by the Government of the United States—the Government which China has long looked upon as her best friend. We have been extremely glad to avail ourselves of this chance, and to increase, if possible, our friendliness with this great nation. China owes much to the United States, and we are rather proud of the fact that nearly all of China's leading statesmen have American college educations."

Commissioner-General Chen Chi spoke in similar vein, and declared that the exercises marked the closer unity of the two largest republics on the Pacific. "Incidentally," said the Commissioner-General, "this friendship between China and America is significant. Not only are we the two largest republics on the Pacific, but we are the two richest nations on earth in actual resources. History will show that there have never been two countries which felt and maintained toward one another the peaceful and friendly relations that always have existed between China and the United States."

Vice-President R. B. Hale, representing the directorate of the exposition, then presented the Chinese Commissioner-General with a bronze plaque, which he declared was both a token of friendship and an acknowledgment of the splendid work and achievement of China.

William Bailey Lamar, chairman of the United States Commission, who is a Southerner, extended the greetings of the Government to the Chinese officials, and declared that the South expects the Panama Canal to open up a great field for its cotton in China.

Consul-General Shu talked briefly on China's progress in recent years, and declared that visitors to this exposition probably will get an entirely different idea of China from that now held by most people. He also urged the audience to view not only the Chinese Government pavilion, but also the exhibits of China in the exhibit palaces. "I believe that our progress since the last world's exposition will startle many people who see our exhibits at this time," he said.

Speaking for the Governor, Chester Rowell greeted the Chinese Commissioners, and touched on the fact that it was on the exposition grounds that the flag of the Chinese republic was first raised and saluted on foreign territory.

Mayor Rolph also extended his felicitations, saying that while part of the Great Wall of China still stands, it no longer stands as a barrier to the progress of that nation.

After the exercises the doors of the three main buildings were thrown open.

RAILWAY CONFERENCE IN PEKING.

On April 5th the International Railway Conference, consisting of representatives from the Imperial Government Railways of Japan, the Korean Railways, the South Manchuria Railway and the Chinese Railways, was opened at the Ministry of Posts and Communications at Peking by Mr. Yih Kung-cho, Vice-Minister of Communications. It was hoped that representatives of the Chinese Eastern Railway and the Russian Railways would also have been present, but owing to the war they were not able to avail themselves of the opportunity. Mr. Yih welcomed the delegates in an excellent speech, to which Mr. Kinoshita, Traffic Manager of the Japanese Railways, responded.

The principal subject discussed was that connected with the arrangement of circular tours from Tokyo via Shimonoseki, Fusan, Peking, Tientsin, and Shanghai, and for the accommodation of tourists arriving at Yokohama to visit Tokyo and other places and take train for Peking via Fusan, Mukden and Tientsin, returning to Japan via Shanghai and Nagasaki. A satisfactory arrangement was reached. Other questions such as the arrangement of time tables, fares, freight rates, cheap excursions, etc., were also discussed.

SOME FACTS ABOUT CHINA'S LAND TAX

A Glance at old Conditions of Assessment and Tax Collection Which the Government of China has now Begun to Reform

(By R. S. A.)

With the inception of a Republican form of government in China hundreds of the new school of Chinese proposed various reforms. They embraced political, financial, commercial, and industrial proposals, all inspired by the idea of saving this country from the national death which threatened as a result of past unwillingness to keep pace with the times. Needless to say the larger percentage of the schemes, which were of a financial and political nature, were never taken into serious consideration. The Government was, however, bent upon placing the finances upon a sounder basis, and in attempting reforms various means were sought, and scores of bureaux were established for the furtherance of investigations into this the most complex of all questions which face the Peking Government.

Since 1912 the following gentlemen have held the finance portfolio: Dr. Chen Chin-tao, Hsiung Hsi-ling, Chou Hsueh-hsi, Liang Shi-yi and Chou Tze-chi. These men have represented the foreign trained as well as the native trained economist. There is hardly a more thorough student of financial matters in the Republic than Dr. Chen Chin-tao. Hsiung Hsi-ling held the portfolio for political reasons rather than because of his fitness for the post. Chou Hsueh-hsi has had great experience in the organization of successful commercial and industrial enterprises, and is to-day one of the best equipped men in the country in native finance. Chou Tze-chi, having studied and served in official capacities abroad, has come into close touch with conditions existing outside of the Far East, and by virtue of holding responsible positions in the Provinces has been thrown into direct contact with the financial questions affecting official as well as commercial transactions. Liang Shi-yi, who has merely acted in a temporary capacity as Minister of Finance, is without dispute the acknowledged master of Chinese finance, and among those officials who have never had the opportunity of studying abroad is the most conversant with conditions existing in Europe and America. These officials in their time have been ably assisted by men of high training, such as Hsu Un-yuan, Chen Wei, Tao Teh-kwun, Wang Ching-fang and many others who have received foreign training, and who have had experience in the workings of domestic finance. But none of them has been able to accomplish a tithe of what is necessary, mainly owing to the constant changing of cabinet officers.

It would appear, however, that many Chinese have at last realised that foreign loans will in no wise be the salvation of China, and that to-day her indebtedness to Europe, America, and Japan is a curse rather than a blessing. They have realised, too, that the contracting of loans for the administration and reorganization of the Government merely adds additional burdens which blot out the temporary relief afforded by the employment of the money so derived. The weight of foreign debt upon this country has had the effect of making it submissive to the political onslaughts made upon it by other nations. This, the people, as well as China's officialdom, appreciate, and of late every effort has been made to avoid too great an expansion of this policy.

It has been brought home forcibly to competent students that in the reorganization of internal finance the Chinese should seek other means than the foreign loan to assist them. It will take hundreds of millions of dollars adequately to reform the currency, and the use of European and American money to accomplish this will but place the country under the control of the money lender. The Chinese must seek a way out of their difficulties by the proper handling of their own finances. And in this connexion the most difficult thing the Chinese have before them is the selection of capable men to carry on the work of reorganization. There are very few men in this country fitted by training and experience to undertake such an intricate task. There is no department in the Government where efficient men are more sorely needed. Up to the present China has been satisfied to keep afloat "by hook or crook," and because of past unsystematic handling of finance the nation is to-day weaker in this respect than the smallest of European countries. This the present day officials only recognise.

The Need of Foreign Experts.

The proper administration of China's finances is most urgent, and we are tempted to believe that this administration could most effectually be carried on under the direction of foreign experts engaged by, and maintained in the employ of, the Government. There would be no question of sacrifice of sovereign rights if the President were to invite experts from Europe and America to carry out financial reforms for, and on behalf of, China. The mere engagement of advisers is of no avail. They must be permitted to do what they can and in this respect there is not an adviser in Peking to-day but who is praying for something definite and useful to perform. Men of experience and integrity can be used to great advantage not only in the carrying out of reforms but in the proper education and instruction of hundreds of young Chinese to take up this most essential work. A competent high-class Englishman or American actively administering the Ministry of Finance, with the full support of the Government, would soon place the credit of this nation upon a firm footing. But competent men must be used. The undertaking of any modern movement in China is doomed to failure unless such men are in charge, and China should seek and employ those experts who will help her rise strong upon her now feeble feet. Foreign loans and the failure to carry out reforms in finance have done and will do more to infringe the sovereign rights of China than anything else, and to avert the trials and tribulations which this condition has imposed is one of the tasks with which the Government should immediately grapple. The first thing that China should consider before undertaking a new step, however, is whether there is sufficient material available in the realm of Chinese officialdom efficiently to do the requisite work. Without casting any reflection upon China we must be frank and admit that we do not feel that the full quota of experience and administrative ability is to be found here for the accomplishment of a thorough reform of native finance. The experience and ability that is lacking must, therefore, be imported from abroad and be conscientiously used by the Government. England and America to-day stand out as the very best friends of China, and they should be brought together by China in the greatest work of the time for the salvation of this country. Anglo-American co-operation would be carried on without the idea of reducing China to vassalage by means of imposing upon her systems that would increase her burdens. These two countries would work for the great good of China, and in doing so would be capable of off-setting any demands made by other nations to have participation without China's consent.

The Government must for its own sake look most seriously upon this question at a very early date. Continual delay is rapidly making of her an international stamping ground. It is by no means by an army or navy that China will be saved, but by the advancement of her commercial and industrial enterprises, and that advancement cannot be initiated and maintained without a sound financial administration. During the recent Sino-Japanese negotiations it has been extremely difficult to arouse world antagonism to the unjust demands made upon China by the

Imperial Government of Japan, simply because the average European and American have begun to feel that China cannot manage, and does not desire to manage, her own affairs. It is incumbent upon China to keep in mind the fact that Japan has made her rapid strides along the road of progress because of the employment and use of foreign experts in the building up of her institutions and the training of her citizens. The only way that China can ever hope to combat the armies and fleets of Dai Nippon is by being able efficiently to administer her own Government. This can be done, and it is high time that men were seriously being trained for this work. It should be kept in mind that the best experts in the world can be secured by China, and the price paid for their services will be but a mere pittance in comparison with the value this country will receive from their efforts if they are given scope to employ their experience and knowledge.

Proposed Land Tax Reform.

The proposals put forward by the Government for the reformation of China's land tax, and the establishment of a Land Measurement Bureau, have inspired what has been written in the above paragraphs. Here is a case in which it is essential that men who can make this work successful as a result of their own experience and training should be sought from Europe and America. The suggestion of General Tsai Ao that Sir Richard Dane, the Co-Chief Inspector of the Salt Administration, be invited to assist is most commendable, and with Sir Richard in actual charge, assisted by men of his own choice, we would feel that this great task could really be accomplished. While General Tsai Ao, as the head of the Land Measurement Bureau, could retain his nominal position, would it not be far better to have Sir Richard in actual control of the work? The Government has selected in General Tsai Ao a man of administrative ability, and one possessing a very keen sense of the importance of the undertaking entrusted to him. But he would welcome the advent of Sir Richard in active control of the work under his charge, and the foreign residents of China have been led to believe that General Tsai really intends to do something as a result of his petition to the President urging that Sir Richard be asked to assist him. There has never been an employee of the Government more loyal and advantageous to the interests of the country than Sir Richard Dane, and the President has on more than one occasion voiced his approval of the work already done by him. He has not come to China to tear down existing institutions, but to regenerate them. He does not believe that all that is in China is bad, but has set to work to utilise in an orderly manner those things that he has found good in the country.

The Land Measurement Bureau, in charge of which it is now urged that experts should be placed, should render the greatest service to China, and the proper taxation of land would mean the ultimate salvation of China. To effect this will be a most stupendous task, and of all the undertakings the Government contemplates this should be regarded as the foremost for consideration. The revenue from land taxation has in the past been the mainstay of the Government, and the collection and imposition of taxes has undoubtedly constituted the most corrupt system ever known in China. The Chinese Government has always assumed its overlordship, and while the transfer of property by individuals has been the privilege of the people, such transfers must be at least nominally sanctioned by the Government through its representatives. This holds true to-day as it did during the Manchu régime, and the previous dynasties.

Before a properly administered tax can be imposed upon the people some sort of measurement must be made, as at present the registries of the yamens all over China contain most inaccurate records. There is hardly a deed in existence that records the correct measurement of the property for which it is a title. In one instance it is remembered that a certain foreigner when purchasing five mow of land found that he had seven, and when the owner was questioned in regard to this discrepancy was told that the land was defined by metes and bounds, and that the taxes paid were upon five mow instead of seven. In this way he was able to deceive the tax gatherer, who never took the trouble to make an actual measurement of the land. In the case of prominent and influential land owners the deeds never show the exact acreage, as the position of the owner in the locality in which he is resident is generally sufficient to persuade the official that trouble would ensue if a proper measurement were insisted upon. We doubt whether there are in the registers of the various yamens to-day ten per cent of the title deeds that represent an exact accounting of acreage.

Corruption of Tax Collectors

In China in the past the Hsien, or District Magistrate, has been the official tax collector. It is the Hsien, or County Superintendent, that has kept the registers of all land transactions, and has been the one to carry out the collection and imposition of taxes. While with the coming in of the Republic the name Hsien has been changed to Hsien Chu Sz, and some of the original authority curtailed, yet he is still the person through whom all taxes are collected. A District Magistrate may be changed at any time, but the positions of yamen runners and tax collectors are inherited. A new Magistrate would not undertake to change these men, and the real control of tax collection is exercised by persons who have held their positions since childhood, having been given the office by their fathers, uncles, or relatives. There is no more corrupt gang of legalised thieves in China than the average yamen runners, and the worst pest that the Chinese people have to contend with is the tax gatherer. He is armed with the police and military authority vested in the Magistrate and is in most cases a blackmailing agent. During the Manchu regime, in each and every yamen throughout the country, there used to be found at special times a table placed to the left of the entrance of the first large hall generally used for the public trial of civil and criminal cases. Behind this table sat the tax gatherer, and as a rule those who appeared to pay their taxes were those who paid in kind, and here the products of their various farms were weighed and their values assessed. The Magistrate entrusted all of the work of tax gathering to his subordinates, throughout the county or district were sent hundreds of them to prey upon the people. These men were bitterly hated by the farmers, and with the backing that the collector received from the soldiers and the police in the pay of the Magistrate they were enabled to terrorise the whole neighborhood. When some poor farmer refused to pay the sum demanded, after having already agreed to pay from three to four times the legitimate assessment, the taxgatherer, ably assisted by the soldiers, would drag him into the township, and after being severely rebuked by the Magistrate he was cangued and beaten. In this way the tax gatherer in China made for himself the deserved reputation of a highwayman. In nearly every town in China during the Manchu regime one would see hundreds of poor fellows, his victims, walking the streets with cangues, their special crimes written on white slips of paper pasted on either side of the neck-hole of the cangue. All measurement of land came into the hands of these men, and money alone was able to restrain and control them.

While there has been no system of actual land measurement put into practice so has there been no effort to see that a proper tax is assessed upon property held. In China each mow of land is assessed according to its productiveness and the general average would approximate something over four cents a mow (a mow being one-sixth of an acre). There is a great deal of leeway permitted the tax collector in the performance of his duty of properly assessing the value of the property, and in many instances he either undervalues or overvalues the land of a taxpayer, the valuation being determined by the official or social position of the landlord. This condition was true in the Manchu times and holds true to a greater or lesser degree since the establishment of a Republican form of government. The registration of deeds as mentioned above, is no criterion, and the tax gatherer is at liberty to do as he pleases. It is a common occurrence to see the tax gatherer and landlord wrangling as to the value of land. Usually the landlord conducts his side of the case through a middleman, who is no other than his secretary and general family treasurer, bearing the title of *Chang Vong*. This individual, knowing the amount that his master will pay, often divides the resultant spoil with the tax collector. A poor farmer, however, is left entirely at the mercy of the representative of the Magistrate, and has either to pay what is demanded or go to gaol.

The amount represented on the official tax receipt presented to the taxpayer does not include the cost of collection, but merely shows the amount that the tax collector has to pay into the coffers of his superior officer. The tax receipt itself is not to be treated as showing the rapacity of the tax gatherer, even though the amount collected, as indicated by the tax receipt, allows the Central Government an annual revenue of say $150,000,000. The actual amount extracted from the landowner on account of fees for collection, meltage, exchange, etc., will more than double the above amount. The cost of collection will in the majority of instances amount to more than double the figures on the register.

The Famous Sacred Edict

In the Sacred Edict issued by Yung Ching there is contained an appeal to the people to be prompt in their remittance of the taxes, and they are warned against being tardy in their payments lest they incur the anger of the rapacious tax gatherer. This interesting appeal is given:

From of old the country was divided into districts, and a tribute paid proportioned to the produce of the land. From hence arose revenues, upon which the expense of the five li and the whole charges of government depended. These expenses a prince must receive from the people, and they are what inferiors should offer to superiors. Both in ancient and modern times this principle has been the same and cannot be changed. Again, the expenses of the salaries of magistrates that they may rule the people; of pay to the army that they may protect them; of preparing for years of scarcity that they may be fed; as all these are collected from the Empire, so they are all employed for its use. How then can it be supposed that the granaries and treasury of the sovereign are intended to injure the people that he may nourish himself? Since the establishment of our dynasty till now, the proportions of the revenue have been fixed by an universally approved statute, and all unjust items completely cancelled; not a thread or hair too much has been demanded from the people. In the days of our Sacred Father the Emperor Pious, his abounding benevolence and liberal favor fed this people upward of sixty years. Daily desirous to promote their abundance and happiness, he greatly diminished the revenue, not limiting the reduction to hundreds, thousands, myriads, lacs of taels. The mean and the remote have experienced his favor; even now it enters the muscles, and penetrates to the marrow. To exact with moderation, diminish the revenue, and confer favors on the multitude, are the virtues of a prince; to serve superiors, and to give the first place to public service and second to their own, are the duties of a people. Soldiers and people should all understand this. Become not lazy and trifling, nor prodigally throw away your property. Linger not to pay in the revenue, looking and hoping for some unusual occurrence to avoid it, nor entrust your imposts to others, lest bad men appropriate them to their own use.

Pay in at the terms, and wait not to be urged. Then with the overplus you can nourish your parents, complete the marriages of your children, satisfy your daily wants, and provide for the annual feasts and sacrifices. District officers may then sleep with ease in their public halls, and villagers will no longer be vexed in the night by calls from the taxgatherers, on neither hand will any be involved. Your wives and children will be easy and at rest, than which you have no greater joy. If unaware of the importance of the revenue to government, and that the laws must be enforced, perhaps you will positively refuse or deliberately put off the payment, when the magistrates, obliged to balance their accounts, and give in their reports at stated times, must be rigorously severe. The assessors, suffering the pain of the whip, cannot help indulging their rapacious demands on you; knocking and pecking at your doors like hungry hawks, they will devise numerous methods of getting their wants supplied. These nameless ways of spending will probably amount to more than the sum which ought to have been paid, and that sum, after all, cannot be dispensed with.

We know what benefit can accrue from this. Rather than give presents to satisfy the rapacity of policemen, how much better to clear off the past assessments. Rather than prove an obstinate race and refuse the payment of the revenue, would it not be better to keep the law? Every one, even the most stupid, knows this. Furthermore, when superiors display benevolence, inferiors should manifest justice; this belongs to the idea of their being one body. Reflect that the constant labors of the palace are to serve the people. When freshets occur, dikes must be raised to restrain them; if the demon of drought appear, prayer must be offered for rain; when the locusts come, they must be destroyed. If the calamities be averted, you reap the advantage; but if they overwhelm you, your taxes are forborne, and alms liberally expended for you. If it be thus, and the people can still suffer themselves to evade the payment of taxes and hinder the supply of government, how, I ask, can you be easy? Such conduct is like that of an undutiful son. We use these repeated admonitions, only wishing you, soldiers and people, to think of the army and the nation, and also of your persons and families. Then abroad you will have the fame of faithfulness, and at home peacefully enjoy its fruits. Officers will not trouble you, nor their clerks vex you—what joy equal to this? O soldiers and people, meditate on these things in the silent night, and let all accord with our wishes.

The manner, as described above, in which land taxation has been levied and collected has had the serious attention of several very prominent foreign authorities on Chinese finance, and their study of the methods adopted has proved not only that corruption has existed in the administration of the land tax of China, but it has been shown that the Government has neglected a veritable gold mine. In 1713, the Emperor Kanghi, in his efforts to conciliate the Chinese, declared that the tax settled in that year should be fixed and immutable for all time, and all of the tax receipts since that time have recorded the date of 1713. The Manchus in their eagerness to win the Chinese to a sense of the justice of Manchu rule lightened the burdens of the people by decree, but in the carrying out of the Imperial orders this was not done by the Government's representatives throughout the Provinces.

In a report on the land taxation in the Province of Honan, Mr. George Jamieson points out that, in the year 1905, taxable land under cultivation would amount to approximately 150,000,000 mow, and were the rate of taxation plus the amounts levied for collection imposed upon the total acreage under cultivation, this one Province would give the Central Government a revenue of something like Tls. 28,000,000, which was about the amount collected by the Imperial Treasury for the whole of China. In Mr. Jamieson's reports the following figures for Honan, during the year 1900, are given and are most interesting:

Legal land tax, return of collection for 1900	Tls. 2,380,000
Accretion at rate of 128%	3,046,400
Collectors expenses at 10%	542,640
	6,969,040
Grain tribute commuted, return of 1900	480,000
Accretion at the rate of 210%	1,008,000
Collectors expenses at 10%	148,800
	1,636,800
Total land and grain taxes	Tls 8,605,840

When the above figures, representing Tls. 8,605,840, are compared with the Tls. 3,000,000 actually turned into the Government, we can readily understand the need for improvement in the levying and collecting of taxes.

In applying the deductions made by Mr. Jamieson from his investigations in the Province of Honan to the whole of China it is instructive to note that he considers that the land taxation if properly administered, would give the Government an annual, revenue from this source alone approximately Tls. 451,000,000.

On April 15th, 1904, Sir Robert Hart, now deceased, addressed a petition to the Chinese Government upon the necessity of reforms in land taxation, and this petition is now proving of the greatest interest in that the Government, seeing the wisdom of his recommendations, have prepared this document for circulation throughout the country. In the efforts of the Government to prepare the officials and the people to receive the schemes proposed for a reorganisation of land taxation in the proper spirit, this petition of Sir Robert Hart has been most helpful. Because of the influence that these recommendations will have on the reforms contemplated the petition in its entirety is given below.

While the reports of Mr. Jamieson and the late Sir Robert Hart are necessarily of a most general character it is interesting to note that both of these gentlemen concur in the belief that approximately Tls. 400,000,000 could be derived for the Government from land taxation. In comparing the figures of the total revenue and expenditure of the year 1913 we are made to realise the importance of the Government immediately taking the matter in hand. The following figures are derived from the revised Budget for the year ending 1913:

Revenue

	Ordinary	Extraordinary	Total
Land taxes	$79,180,722	$3,222,888	$82,403,610
Salt Revenue	77,401,265	164,269	77,565,534
Customs Duty	66,970,003	1,254,280	68,224,283
Likin	32,704,806	6,054	32,710,860
Sundry Duties	37,862,160	417	37,862,577
Sundry Taxes	3,811,172	132,412	3,943,584
Government Properties	7,849,612	634,093	8,483,705

Miscellaneous		230,308	230,308
Public Loans		22,337	22,337
Total	$318,165,553	$15,782,939	$333,948,482

Expenditures

	Ordinary	Extraordinary	Total
Foreign Affairs	$3,293,115	$1,013,233	$4,306,338
Interior	39,618,149	4,263,860	43,882,009
Finance	210,345,180	181,568,614	391,913,794
Education	5,207,215	1,701,635	6,908,850
War	136,964,494	26,910,518	163,775,012
Navy	7,665,881	1,307,014	8,972,895
Justice	14,671,825	370,312	15,042,137
Agriculture & Commerce	5,083,386	959,935	6,043,321
Communications	934,877	457,843	1,392,720
Total	$423,684,122	$218,552,954	$642,237,076

The above figures representing the receipts and expenditures are well worth the attention of the Chinese people. They should be made to appreciate the necessity of not only reforming the land tax of China, but all should be made to feel the absolute necessity of placing China's finances upon a sound basis. An income of Tls. 400,000,000 annually would defray the entire expenses of the Government upon the basis of the figures of 1913.

As pointed out in the beginning of this article it is incumbent upon China to save herself through the employment of money other than that derived from foreign countries. This can be done, and the land tax is only one of many means to be employed. In the reorganisation of the Salt Gabelle China has undoubtedly recognised the benefits accruing from proper administration. The Customs service is another instance in which system has proved of value. There is no reason why the President should not receive the united support of the people in his present undertaking embracing a thorough reform of taxation.

Having considered the advantages to be had from the reform of land taxation it is interesting to note the manner in which the Government now intend to solve the problem. In an interview with General Tsai Ao, who has been placed in charge of the Land Measurement Bureau, we have been much impressed with the business-like manner in which he is proceeding to organise his work. The General fully appreciates the difficulties confronting him with the establishment of an effective instrument of the Government to deal with the reformation of land taxation. In regard to the plans for the formation of the Bureau the General said in part:

"I have been appointed by the President to undertake what must be considered one of the most difficult and yet one of the most necessary reforms in China. For years the Government has discussed the need for reforming the methods adopted by us for the measurement of land and the proper taxation of it. Because of the stupendous nature of such an undertaking it has been delayed. There is nothing that will contribute more to China's independence than stability of finance, and this is the main object in the mind of the Government for the immediate prosecution of this work.

"In China one of the greatest troubles we have in setting about our work is the inaccuracy of our statistics. Our laws have not only been far short of perfect but in the execution of these laws we have been most negligent. From time immemorial all land is supposed to recognise the over-lordship of the Government, and the people in registering their deeds have been commanded by Imperial Decrees to be careful to make an accurate measurement before registration. This, needless to say, has been rarely done, and the officials have not in the past made proper investigations into their accuracy. As a result of the disorderly manner in which property registration has been carried out we are now face to face with a mass of inaccuracies.

"I have felt that the proper measurement of land would be the only means to adjust matters, and the Government has often thought of making a complete and detailed survey. This would be not only a most expensive task, but would consume years of time. In this connection we are making every attempt to ascertain what has been done outside of China by other nations. Owing to the war in Europe we have been unable to send delegations to the Continent to carry on a study of systems employed there. In America we have selected certain Chinese to gather all the information possible upon the subject and forward it to this Bureau. We have succeeded in sending men to India, Burma, Java and the Philippines to look into the methods adopted in those countries. We are also getting all available information as regards Japanese procedure in such matters. We hope in the near future to be able to get enough valuable data to enable us to set to work methodically in building up this Bureau.

"I have established a branch of the Bureau in Peking to undertake the necessary surveys in the Metropolitan Prefecture. Strange to say, in many places there have been no records kept of any sort whatsoever. This condition of affairs will hold true in many districts throughout China. The idea of establishing this branch Bureau is in the form of an experimental station. The work is done under our immediate supervision, and all new methods considered good can be tested here. This branch will be divided into three departments (1) Survey (2) Investigation (3) Secretariat. We will make every effort to build up a small model of an efficient organisation to be used in different parts of the country where branches will be established.

"The need of foreign experience to help us has come to my attention in a very forcible manner. China never having had to undertake this work in a systematic and scientific way has no one with enough practical knowledge to plan an effective organisation. In this work I would very much desire the assistance of Sir Richard Dane, who is an expert in these matters. I have had a talk with Sir Richard which has proved most instructive, and if he can spare the time we will make the necessary arrangements to secure his valuable aid in our work.

"I fully appreciate that all of the work connected with this Bureau must be done in the approved manner, and, therefore, I am taking a good deal of time in making necessary investigations and the trying out of various schemes here so that a workable system may be evolved from our study and practice of different methods. We will have to be exceedingiy patient in this work, and it is hoped that all of those interested will be patient with us.

"It is not only our duty to make a survey, but we have the added work of checking all of the deeds representing land registered in the various yamens over the country. This, as you will see, is a very important and painstaking task. The indefinite way in which yamen registers have been kept, and the hundreds of means employed in the evasion of correct and accurate accounting for property make of the whole a most complex problem. With the assistance of the officials and people this task will not prove unsurmountable, but their active co-operation is absolutely essential to success.

"As to the manner in which taxes are to be imposed, and at what rates, we have as yet not undertaken to consider. We must first make as good a survey as is possible under the circumstances, and after a thorough reorganisation of the present records contained in the different magistracies we will be able to have a basis upon which to work.

"I have read very often the petition of Sir Robert Hart upon the necessity of a reform of land taxation. This document should act as a great stimulus to the Government and people in showing them the means of deriving a revenue of such great proportions without the additional disadvantage of increasing the burdens of the populace. I do not believe that Sir Robert Hart's scheme is in every way practicable, and because of the general nature of the recommendation it cannot be expected that this petition should take into consideration all the details necessary for the perfection of a workable proposition. The report of Sir Robert Hart as well as many others made by foreigners interested in the welfare of this nation have proved most interesting and instructive.

"I am extremely sorry that it is impossible to state anything more than the idea that we intend to prosecute the work before us in a most thorough manner, and that at present we are simply gathering data, and selecting men to formulate a scheme that will embrace the whole of our programme in China. We hope from time to time to be able to give the FAR EASTERN REVIEW reports that will show progress in this undertaking."

General Tsai is one of China's younger men of ability, and his rule in the Province of Yunnan records the successful efforts of one of many Hunanese, who have been characterised by their ability to cope with difficulties almost unsurmountable. The General has the reputation among his fellow countrymen of being very scarce in the use of words, but a man full of ideas that he has the ability and persistency to carry out. We have been very much impressed with this new head of the Land Measurement Bureau, and have every hope that he will be the means of creating a most effective organisation to deal with the most vital problem to-day confronting the Government.

The Recommendations of Sir Robert Hart.

PART ONE.

War has now broken out between Japan and Russia, in which each of the two Powers is fighting for the maintenance of its own desires, which are at variance with its opponent's policy; and this has arisen for no other reason than because China is herself fundamentally weak. How and when the war between these two Powers is to end, whether after two or three years' time or five or six years, is a question which it is difficult to answer under the present circumstances. One thing, however, may be certain; and that is, that when the war is ended, serious troubles will fall to the lot of China, if she remains as she is. If, however, we do not wish to be at the beck and call of others, but on the contrary, desire to make others listen to our wishes, there is no alternative before us but to take advantage of the opportunity now presented to us and to use our best energies to strengthen ourselves. The first step to take in order to make China powerful is that of organising and drilling our armies, and to effect this we must first set about to find the ways and means of raising funds.

Now the present revenues of China from Customs duties, salt, land, and poll taxes only amount to eighty odd million taels per annum. Out of this sum the greater half is consumed in repaying loans and meeting the war indemnity (Boxer). Hence it is incumbent on us to find ways and means of raising extra funds to meet the exigencies of the case. Of late there have been not a few persons who have been discussing the question of raising funds, and there have not been wanting suggestions as to how to procure such funds. In my humble opinion, however, the most tangible and feasible of all measures, which is comparatively speaking at hand, is that of reorganising the land and poll taxes. I find upon examination that the dimensions of China, not counting Chinese Turkestan, Mongolia, or the three Manchurian provinces, are 4,000 li long and as many in breadth; in other words, China Proper contains an area of no less than 16,000,000 square li. To each square li there should be 540 mow of land. Taking it, say, at 500 mow to the square li, then there should be 8,000,000,000 mow in an area of 16,000,000 square li. If then, a land tax of 200 cash be assessed on one mow, with a fixed rate of exchange of 2,000 cash to the tael of silver, then from every ten mow of land there can be collected a tax of one tael of silver. Eight thousand million mow of land would therefore yield 800,000,000 taels in taxes. We cannot, however, expect to collect regularly each year the above sum of 800,000,000 taels, owing to the fact that there are fat and lean years, while some land may be rich and other poor. Furthermore, account must be taken of mountains and streams.

I recall a remark made at one time during his lifetime by the late Marquis Li Hung Chang in regard to the taxable portions of the Empire. His late Excellency declared that of the land in the eighteen provinces of China Proper there are no less than two-thirds which can be made to pay taxes. Taking then the taxable area as one-half, we can yet practically collect 400,000,000 taels. For every day that the Government owns this area of land, so long does the above noted amount lie ready to the hand for collection. Therefore this manner of raising funds is, comparatively speaking, much more feasible and practical, and capable of more steady and lasting advantages, than any other suggestions for raising money yet brought forward. If the Government will put into practice this manner of raising funds, it will have at hand a bountiful income for the accomplishment of all national measures of importance, and there need be no fear of shortness of funds, while the inhabitants of the Empire will not be made to suffer the least iota of oppression and trouble. Should my recommendation as presented above meet the favourable consent of the Imperial Government, I shall have the honour of presenting for their acceptance another paper setting forth the manner as to how to accomplish the ends in view.

PART TWO.

With regard to the large amount of 400,000,000 taels revenue which was estimated in the foregoing recommendation as collectable from the land and poll taxes (payable in rice or money) of the Empire, it is evident that the question is in need of energetic reorganisation.

The manner of collecting the above taxes hitherto in vogue has been of the greatest injury to the people, who have to pay disproportionately large sums, while only a small portion of these amounts actually goes to the Government. As time passes the people suffer more and more, while the frauds practised upon them by the tax-collectors increase in number each day. If, however, we intend to use our best energies to reorganise the system of raising funds from these land taxes, it stands to reason that the practice of collecting now in vogue must unhesitatingly be abolished. Taking into consideration the fact that this matter is one in which the inhabitants of China are to pay taxes to the Chinese Government, it is evident that the Chinese officials are better acquainted with the actual state of things than an outsider would be, and can recommend remedies superior to those that may be suggested by one of the latter. It is, however, the opinion, after due consideration, of the Inspector-General of Customs, presenting this paper, that if the following suggestions are put into practice, there need be no doubts as to the ultimate accomplishment of the ends in view. I am, moreover, of the opinion that the more the details are entered into as to the manner of doing things, so much the slower will be the inauguration of the reorganisation in view. Hence it would be far better to take up the most important points and start the matter right away, and then go along step by step, allowing things to unfold themselves as we proceed, instead of going into long and tedious details which will give much trouble and take up important time.

I will therefore present an outline of my scheme under the following numbers:—

(1) Should an Imperial decree be issued to the high authorities of the various provinces commanding them to begin the reorganisation of the land taxes together, the chances will be that each provincial official will inaugurate an independent scheme of his own and so cause considerable difference of opinion, thereby preventing that unanimity of action so much to be desired in bringing about solid results. It is therefore suggested that the scheme in view be started in a certain district (hsien) belonging to a certain prefecture (fu) in a certain province (sheng). After the said hsien shall have accomplished the object of the scheme in question it shall be taken up in the same way by its neighbouring hsien or district and so on gradually to the next district, and thus in natural sequence gradually until the whole province is operating under the new system of tax collection.

(2) As soon as a certain district has been selected to start the new system, it is recommended that ten able and intelligent expectant officials of the province, in which is situated the hsien in question, be chosen and sent to join the district magistrate, or chih-hsien concerned, inaugurating and putting into operation the scheme. With the knowledge and experience thus obtained by these ten expectant officials, they may then be used to start the same in other districts.

(3) The chih-hsien of the selected district shall begin by dividing his hsien into four principal portions, namely, Northern, Southern, Eastern, and Western portions. He will then issue proclamations clearly to inform the people in his jurisdiction that those who own land are each required to draw a statement within one month's time, setting forth how many mow of land each possesses, where situated, and the exact boundaries. Attached to this statement must be a plan or plans made of the property or properties, all of which the said owner of land will be required to present personally at the Yamen of the hsien concerned. Upon receipt of said statement and plan or plans, the chih-hsien shall at once enter the details therein contained in a new book to be provided by him for the purpose.

(4) In the proclamations to be issued by the said chih-hsien there shall be inserted a warning to the people in the following words:—

"I, the district magistrate, will not at present depute any one to survey and measure your lands, but will leave it to each landowner to make his own declaration as to how much land he owns. If, however, it be subsequently discovered that any one had failed to report the exact amount of his land, and after an official survey of the district it be found out that a person has reported to the magistrate less land than he actually possesses, the delinquent will be fined."

(5) After a landowner has registered his property in the district Magistrate's Yamen, the said magistrate shall issue to him a document (Yut'ieh) or order, with a registered number, commanding the said landowner to appear personally at the said Yamen at the beginning of the 10th moon of each year, and there, according to the number of mow set down in the said document or order, pay land taxes thereon at the rate of two hundred copper cash per mow. Each order shall have a corresponding "butt" in a book prepared for the purpose by the magistrate for the purpose of subsequent identification and tally whenever necessary.

(6) The foregoing work, such as the issuing of proclamations, presentation of landowners' declaration, of property owned by them, entering same into the new records, and the issuance of the order—"Yut'ieh"—must be accomplished by the end of three months. The ten expectant officials must every day personally attend at the Yamen and join the chih-hsien in working out the scheme, and being cognisant of everything passing beneath their eyes will be able to understand matters clearly. They will then be sent to the other hsiens of the prefecture in question, and there show the other hsiens how to start the scheme, following the methods inaugurated in the first-named hsien, three months being granted for the accomplishment of the said scheme. This having been done these expectant officials, being in the meantime joined each by ten other expectant officials, shall then proceed to the prefectures of the province in question, and in this manner by the end of the second term of three months the whole prefecture of the said province will have started the new system of land taxes.

(7) After the end of the second term the said one hundred expectant officials who have been engaged in acquiring a knowledge of how to work the new system should be sent to assist the chih-hsiens of the other prefectures of the provinces concerned in inaugurating the new system, so that by the end of the third term of three months the new system will have been put into practice in the whole province in question.

(8) At the end of the three months after the new system has been inaugurated in a district the chih-hsien of the same shall be required to make a detailed report to his prefect as to how many mow of land there are in the four principal divisions of his hsien, and how much money at two hundred copper cash per mow can be collected therefrom. The prefect

will then send a report to the high authorities of his province, who will in turn report the same to the Board of Revenue at Peking, to place on record for future reference.

(9) Should a landowner sell any portion of his registered property to another, the vendor, in company with the purchaser, shall take with them to the Yamen the order (Yut'ieh) originally issued by the chih-hsien, and report the transaction in question. This will then be recorded in the said order, and the same must also be set down in the land records of the Yamen.

(10) At the beginning of the 10th moon each landowner, taking with him his "Yut'ieh" (order), shall either proceed in person to the chih-hsien's Yamen to pay his taxes to the revenue officer of the said Yamen in accordance with the amount noted down in his order, or shall pay the same to any bank to which the landowner shall be directed, after payment of which a receipt shall be given him. The chih-hsien shall then enter the amounts received in his accounts for the period under consideration, and after having collected all the dues shall be required to send the money collected to the prefect of his prefecture, who shall in turn transmit the taxes to the Provisional Treasurer to be deposited in the provincial treasury. The Viceroy or Governor concerned will then make the usual report to the Board of Revenue. If a registered landowner fail to pay his taxes when the time for doing so has arrived and passed the delinquent shall be duly fined.

(11) No Yamen scribe or runner shall be permitted to ask for money from a landowner, whether the latter be engaged in making his declaration to the chih-hsien or when he is paying his taxes; nor shall the said landowner be allowed to give presents of his own accord. Collectors of taxes shall not be allowed to demand more than two hundred copper cash per mow, and in paying in taxes to the treasury neither delay nor any deduction in the amount of taxes payable shall be permitted.

(12) After the introduction of the new system into a province in the space of one year, the one hundred expectant officials who have learned how to inaugurate the system shall be sent to the five provinces nearest said province to introduce the same, in accordance with the manner inaugurated in their own province, into the various hsiens of the said five provinces, and the high authorities of the said provinces shall also copy exactly the practice of appointing a number of expectant officials to accompany the visiting officials, and so learn from the latter the new system. In two years' time six provinces will have thus started to work the new system.

(13) At the beginning of the third year the expectant officials of the said six provinces should be sent to the other twelve provinces (of China Proper) to introduce the new system in the same manner noted above, and thus at the end of the third year of the starting of the new system the whole of the eighteen provinces of the Empire will have inaugurated it.

(14) The above is an outline of how the new system shall be put into execution. Of course each place, or each matter, requires certain details. The best way for it would be to wait until a certain matter has been started, and then to fit in the necessary details needed to govern same. The main object in view is that the less regulations there are the better it will be for the introduction of a new scheme. This is only an outline of how to work the scheme; if it should turn out that certain portions need taking out or require some change the best way would be to wait until the end of the third year, when all the provinces have inaugurated the new system, and then consult as to what should be added to or what measures ought to be discarded as harmful, in order that only the best manner of doing things should go finally into practice.

(15) This scheme, of course, should be confided to the various Viceroys, Governors, Provincial Treasurers, Judges and Taotais to work out honestly and diligently. Especially will it be necessary for the Ministers of the Board of Revenue to send, off and on, officials from that Board to go to the provinces and select at will the records of any districts or hsiens they may visit, and see whether the same system is in operation as in other provinces or whether the records, accounts and receipts are practically similar to others, and mean what they show. After the period of three years we may certainly expect something tangible in the shape of the taxes received under the new system, and the total amount received therefrom may be anticipated as not only as much as 400 million taels, but something more than that sum.

PART THREE.

The Imperial Government having obtained this source of revenue, namely, four hundred million taels, those at the head of the Government will doubtless have their own ideas as to how the above huge sum should be disbursed. If, however, I am placed in control of this revenue, I beg to suggest the following manner of using the money.

(1) If we wish to preserve the integrity of the Empire and seek to benefit the people and guard against harm, we are bound to pay special attention to the reorganisation and improvement of our armies. In organising the troops of China, speaking in general terms, four large armies ought to suffice the country. This is to say, one army should be stationed at Chihli province, one in the Liang-Kiang (Lower Yangtsze), one in the Hukuang (Middle Yangtsze), and one in the two Kwang provinces (Canton). Each army should be composed of 50,000 regular troops, whose pay and rations will cost 5,000,000 taels per annum. The officers of each army should consist of 1,000 officers of the sixth grade, whose pay shall be 500,000 taels per annum; 500 officers of the fifth grade, with a total annual pay of 500,000 taels; 250 of the fourth grade, with a total annual pay of 500,000 taels; 50 officers of the third grade, with annual pay amounting to 150,000 taels; 25 officers of the second grade, whose total yearly pay shall be 100,000 taels; and ten officers of the first grade whose total annual salaries shall be 100,000 taels; making a grand annual expenditure per army corps of 6,850,000 taels. Four active army corps will therefore require an annual outlay in pay and rations of 27,400,000 taels. In addition to the above, there should be four military academies, each academy to cost 500 000 taels, or 2,000,000 taels for the four institutions per annum. An annual outlay in ammunition and arms of 3,000,000 taels will also be necessary, thus making a total expenditure in regard to the regular troops of the Empire of 32,400,000 taels per annum. But regular troops of the active armies of the Empire must have a certain limit or term of service for each man, after the expiry of which term he goes into the first reserve for a certain limit of time, after which again he goes into the second reserve. The annual expenditure of the men of the first and second reserves may be computed at one-half of the amount expended on the regular active troops; that is to say, at 15,000,000 taels. In this manner, after ten years' time, we shall have 500,000 men for each category, namely, the active, the first and the second reserves, at an annual expenditure of 47,000,000 taels, or roughly, the sum of 50,000,000 taels.

(2) There should be no delay in organising the above-named troops; but what is of more importance is, that we should be prepared to organise a fleet also. With a fleet, if there should be war our battles with an enemy will be fought away from the country; whereas, if we have no fleet, any fighting we may have will have to be done on our own territory. We should have three fleets, one in the Peiyang (North China Seas), one in the Nanyang (Yangtsze delta waters), and a third in waters midway between the Peiyang and Nanyang. Each fleet should be composed of ten large and ten smaller warships, and ten first class torpedo-boats and 50 smaller ones. Each fleet should be manned by a total number of 10,500 men, whose annual pay should be 1,050,000 taels. Each fleet shall have 400 officers, whose annual pay will be 600,000 taels, or a total expenditure of 1,650,000 taels a year for each fleet. Three fleets will, therefore, require 4,950,000 taels per annum The amount to be expended in the construction of the 240 vessels of three fleets should amount to 200,000,000 taels, this expenditure to be spread over a number of years, so that each year one-tenth of the above vessels shall be built at an expenditure of 20,000,000 taels a year. This shall continue year after year without cessation in order to build up the navy. There should also be three naval academies at 500,000 taels for each per year, or a total of 1,500,000 taels for the three. The above-noted naval expenditure will, therefore, amount to 26,450,000 taels per annum, or, roughly, 30,000,000 taels.

(3) In addition to the army and navy establishments, there should be four arsenals for the manufacture of arms and ammunition, the expenditure for each arsenal to be about 2,500,000 taels or 10,000,000 taels for the four.

(4) With the chances afforded by the possession of such a large revenue to the State, the opportunity should be taken to reorganise the salaries of the civil officials of the Empire, so that each may have a settled sum of money sufficient for his personal expenses and leaving a small margin. In this manner an official will be under no necessity of extorting money from the people under his jurisdiction. The Government, of course know the exact number of civil officials in the Empire. I will, therefore only give an outline of it as follows:—

Let us say there are 20,000 officials of the grade of police magistrate (Hsunchien). These will need 3,000 taels each per annum, or a total of 60,000,000 taels for the whole; about 2,000 district magistrates (Chih-hsien) at ten thousand taels each per annum, or a total of 20,000,000 taels; about 100 prefects (Chihfu) at 20,000 taels per annum, or a total of 2,000,000 taels; about 100 Intendants of Circuit (Taotai) at 30,000 taels per annum, or a total of 3,000,000 taels; 10 Salt Commissioners (Yanyunsze) at 35,000 taels per annum, or a total of 350,000 taels; 20 Provincial Judges (Neith-ai) at 40,000 taels per annum, or a total of 800,000 taels; 20 Provincial Treasurers (Feng-tai) at 50,000 taels per annum, or a total of 1,000,000 taels; 20 Governors (Hsunfu) at 60,000 taels per annum, or 1,200,000 taels; and, say 10 Viceroys, at 70,000 taels per year, or a total of 700,000 taels. There are about 2,500 superior Yamens, or Government offices, in the country for the up-keep of which it will require each about 10,000 taels per annum, or a total of 25,000,000 taels; and about 20,000 smaller Yamens, for the up-keep of which will require each about 1,000 taels per annum, or a total of 20,000,000 taels. The officials, high and low, connected with the boards, ministries, and Yamens in the capital will require a total salary of 12,000,000 taels a year while the ten Tartar Generals and Military Governors in the provinces will each require 1,000,000 taels a year for themselves and their Bannermen garrisons, or a total of 10,000,000 taels. Calculating upon the above basis it will be seen, therefore, that the amounts to be paid yearly for salaries of officials in Peking and the provinces will require not less than 158,000,000 taels, or, roughly 160,000,000 taels per annum.

(5) Now that the various provinces are engaged in establishing modern schools with the important object of educating men for the service of their country, there should be some reliable sources of revenue to support said schools, so that there may be no danger of breaking down half way through want of funds. Out of the revenues of the new-land tax scheme there should, therefore, be set aside an annual sum of 10,000,000 taels for said schools.

(6) The postal system in all countries has for its object the convenience of the people at large. China having also started the system, should lay aside a certain set amount for the support of said system. This branch of the Government at the commencement is always a long one—the expenses exceeding the income—but in due course of time when the system shall, after several years, be made to run smoothly everywhere and experience has been gained, the income will certainly be more than sufficient to meet expenditure, which will require about 1,000,000 taels per annum.

(7) Telegraphs are of the utmost importance to the machinery of State, while at the same time they benefit greatly merchants and the masses.

The circumstances attending the establishment of telegraphs in a country are similar to what is usually experienced with reference to the postal department; that is to say, in the beginning the expenditure on telegraphs always exceeds the income accruing therefrom; but, in course of time, all will be changed, and the income will always exceed the expenditure. At present this department requires an annual expenditure of 5,000,000 taels.

(8) In foreign countries in the west it is customary to take out of the revenues of the countries in question a certain sum for the up-keep of the Royal Palaces. China may therefore well follow this example and lay aside from the total revenue of the Empire a sum, say, of 10,000,000 taels for the purpose.

(9) In a word, therefore, in accordance with the foregoing, we have an estimated annual expenditure in round numbers under the following headings:—

(a) Army.. ...	Tls. 50,000,000	(b) Navy... ...	Tls. 30,000,000
(c) Arsenals ...	10,000,000	(d) Salaries of Civil Officials..	160,000,000
(e) Modern Schools	Tls. 10,000,000	(f) Postal Deprt.	1,000,000
(g) Telegraphs	5,000,000	(h) Palace Expenses	10,000,000

An aggregate expenditure of 276,000,000 taels. Deducting the above from the estimated land-taxes of 400,000,000 taels, there is still a margin of 124,000,000 taels. This amount may be placed in reserve to meet emergencies, or it may be used at various times upon important schemes which shall be beneficial to the Empire and the masses. It would be folly to squander the excess named in the foregoing upon frivolous matters or for useless pleasures. Besides the excess accruing from the land-taxes, there are the revenues to be derived from the Customs and salt-tax. These taxes give, roughly, an annual revenue of some 40,000,000 or 50,000,000 taels, which will easily suffice to pay off foreign loans and the war indemnity. After the liquidation of the above liabilities of the Empire, it would be a good plan to abolish both the Customs dues as well as the salt-tax, in order to give freedom of trade to the people which, while enriching them, will procure a reserve of wealth to the masses, and consequently to the enrichment of the whole Empire.

PART FOUR

The foregoing suggestions were divided into three parts. Part One dealt with the question of raising funds through the land and poll-taxes; the estimates being on the basis of the superficial area of the country, from which the number of mow of land was calculated, and then the amount obtainable from taxation of said land. Calculations were made on a substantial basis which could be easily put to proof, and with regard to which there could be no room for doubt. Part Two suggested the manner of procedure in inaugurating said taxation. The methods of taxing suggested by others are many, yet that proposed by the author of these recommendations (Sir Robert Hart) is in his opinion practically substantial and feasible. Part Three showed that since the country has at command such an immense revenue, the money should be used to inaugurate and put into operation a number of schemes of vital importance and indispensable to the Empire. Plenty of margin was allowed over and above the estimated disbursements, so that none concerned would find themselves burdened by the conditions of the case. Although the items of disbursement are many, in course of time there will surely be an excess of revenues available.

The proposed manner of reorganisation of the land-taxes not only will not harass the people, but upon averaging the matter the amount of tax demanded for each mow of land will be less than that hitherto paid by land-owners. Moreover by land-owners being required to go personally to the Yamen of their own chih-hsiens, or district magistrates, to pay their taxes, they will be exempted from the extortions and impositions of Yamen underlings going into the country villages to call for and hasten the payment of taxes.

With regard to the fact that civil officials of the Empire will get large salaries abundantly sufficient for their own wants and the support of their families there will be no harassing thoughts regarding family necessities, and all private anxieties will be removed. These officials may therefore be expected to do their duties with equable mind and free from all distractions. Funds for national measures that may be needed for the Empire may thus be provided for from the land revenues, and even then there will be an ample margin left.

The war in the Eastern portions of our Empire has already begun, and no one dare venture at the present moment to foretell which shall be the winner and which the defeated Power, or how many months, or even how many years, it will last. One thing we know about this, however, is, that the battlefields are to be within the territories of China, while our people inhabiting regions in the neighbourhood are surely in danger of suffering all kinds of the severest hardships and oppressions. Finally, when the war comes to an end, the treaty of peace entered upon by the belligerents will certainly contain clauses affecting the Eastern and Western portions of the Chinese Empire. It therefore behooves China to seize the opportunity lying before her now to use her utmost strength and best efforts to start properly various measures of vital importance to the country, so that when the time arrives when it shall be incumbent upon the Imperial Government to make a declaration, China shall be in a proper position to do so, and compel also others to listen to her wishes without any opposition. In a word, the present is the time to inaugurate measures for benefiting the country and for guarding against any contingency of harm. In urging a reasonable policy we must all the more advocate strength; desiring strength we must strive to make ourselves powerful, and to make ourselves powerful we must naturally seek for ways and means whereby we may obtain the necessary funds. So far, all sources of revenue we have in view do not show a sufficiency coupled with a margin, except it be the sole one of reorganising the land-taxes, which when collected will be sufficient for all purposes.

Some one may argue that this proposition being one that has never been tried before, it is therefore what is nowadays styled "A New Scheme." But for all that, its being a new scheme should not render it liable to opposition as one that ought not, for that reason, to be permitted to be put into effect. A scheme must be shown to be feasible and so put into effect or shelved as the case may be. The fact of its being a new or old scheme should not be allowed to militate against it, or *vice versa*.

Again, on the other hand, it may be argued that one of the injunctions placed by an Imperial ancestor upon his descendants occupying the Throne, strictly forbids in perpetuity any additions being made to the land-taxes of the Empire, and therefore it would be presumption to propose such a measure. This kind of argument is, however, quite wrong. The plan proposed is not to add to the land tax, but only that there should be one uniform taxation throughout the whole Empire.

A proposition like the present earnestly seeks a tangible and practical solution of the question (of finance) and the reorganisation suggested is one that is needed to meet the exigencies of the times. Moreover the method of reorganisation proposed is both simple and easy to put into effect. It only requires diligence and honesty of purpose in undertaking this duty, in which case the people of the Empire will be certain to fall in with the plan with glad and willing hearts, while officials naturally will use their best efforts to put the scheme through.

When the Imperial consideration has been given, it will be necessary to go into the matter with care and detail, in order to decide whether to inaugurate the scheme or to abandon it. The moment, however, it has been decided to start it, and due notice has been given to those in Peking as well as in the provinces, then no one shall be allowed to obstruct the scheme by trying to persuade their Majesties to rescind their consent, no matter who the person may be who shall attempt to do so. Even should such an attempt be made, there is no reason why the person's word should be listened to by their Majesties. With reference to suggestions, that may be made by any one, it is only needful to consider whether such suggestions meet the exigencies of the crisis; it is unnecessary to discuss their merits on the basis of who the person may be who has made the suggestions in question.

With regard to this reorganisation of the land tax it will be necessary first to report upon the number of square li of a place, next the number of mow of land therein, and then the tax levied. If the report is substantially correct, then will be the time to consider how to reorganise the old system, to see whether the new plan will be lighter and easier of manipulation and also that it will not cause trouble and inconvenience to the people.

If the new plan meets the above requirements, then the amount of tax to be levied shall be considered. After all this has been done, and due examination made as to whether the new tax shall be sufficient for the purposes in view, and it has been found to be practical and feasible, then will be the time to decide about putting the new scheme into effect. My opinion is that if the foregoing scheme can be put into execution, the revenues of China will certainly increase from year to year, while it will follow that the power and strength of China will be greater and greater year after year. I, indeed, stand looking eagerly forward to the accomplishment of all these things.

CHINA'S MANUFACTURE OF GLASS.

According to a Japanese investigator there are twenty glass factories in the Yangtze valley. Eliminating three factories under Chinese management all the factories are employing Japanese workmen. Whose first appearance dates back only to 1910 when the Fujia firm established a factory in Shanghai to manufacture lamp chimnies. But the factory soon closed on account of poor management. Workmen thus thrown out of employment found capitalists and established themselves as glass manufacturers in several places. As the goods thus manufactured in China are much cheaper than imports from Japan, the industry, has developed until the amount of the articles turned out a day during fall and winter by the various factories in the Yangtze valley is said to reach over 7,000 dozens. In Shanghai there are seven factories for the manufacture of lamp chimnies of which three are under the management of the Chinese and four of the Japanese.

The wage of Japanese workmen in China is from 50 to 70 per cent. higher than that in Japan ranging between 1 *yen* 80 *sen* to 1 *yen* 90 *sen* a day. Waste glass can be obtained in China, but owing, to an increase of the factories in Shanghai, the price has of late greatly advanced, being quoted at 18 *yen* per 100 *kin* ($9 gold per 133⅓ pounds). About 15 per cent. of the amount is of practically no use, and the real value is something like 20 *yen*. Good materials (sand and stones) have not so far been discovered in China, so that the materials for the glass of superior quality are imported from Japan.

The procedure for the import of nitre through the Chinese customs house is much complicated. In consequence, glass factories not having a sufficient knowledge of commerce are mostly using the Chinese nitre. The Chinese nitre in the Shanghai market is not of good quality, and its price is unduly high, being quoted at 33 *yen* per 16 *kan*. In Japan nitre of 25 *kan* is only 13 *yen*. One furnace requires about 12 *kin* (16 pounds) of nitre a day.

ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

COMMERCE AND INDUSTRY

World's Rice Crop.—The second general memorandum of the rice crop in India for the current season shows a total area of 75 million acres under the crop, being only 100,000 acres short of last year. Conditions in Bengal, Behar and Orissa, Assam, and the United Provinces have not been favourable since September, and the outturn of winter rice in consequence is somewhat shorter than these figures indicate, especially in Behar and Orissa, where it is estimated at only 75 per cent. of the normal. As regards extra Indian areas the information is that in Egypt the conditions are favourable, in Japan the crop is 12 per cent. above normal, while in Korea, Italy and United States slight variations compared with last year are expected.

Cotton in Burma.—The Commissioner of Settlements and Land Records estimates that 279,377 acres were under cotton in Burma, as compared with 282,252 acres in the crop year ended June 30, 1914. The total yield of the Province is estimated at 51,095 bales of 400 pounds each, as against 47,881 bales in the crop year ended June 30, 1914.

Burma's Peanut Crop.—It is estimated that 254,766 acres in Burma are now under peanuts, an increase of 10,000 acres over the crop year ended June 30, 1914. The gross outturn of the Province is estimated at 104,000 tons (ton of 2,240 pounds), as compared with 93,700 tons during crop year ended June 30, 1914. The estimated outturn of 104,000 tons is the highest on record, and represents 15 per cent. of the total area under peanuts in British India.

Sheep Breeding in Japan.—Imports of wool into Japan now amount to about $7,000,000 a year, with a tendency to increase for woollen textiles. Experiments in sheep breeding are being made at the farm of Marquis Matsukata and in Chiba prefecture, while the Department of Agriculture and Commerce is encouraging some villagers in the island of Hokkaido to breed sheep, and has decided to appropriate about $15,000 for sheep breeding in 1915. It may be impossible to make sheep breeding as prosperous in Japan as in foreign countries, on account of geographical and other conditions, but if encouraged and carried on as a subsidiary business of farmers, some of the domestic demand may be met. In view of this the Department seems very eager to encourage stock farming.

Osaka's Industries:—*Celluloid.*—Effective in diminishing the import as has been the establishment of the two celluloid factories in the neighbourhood of Osaka, both concerns appear to be far from making a financial success of the undertaking, and had again to chronicle losses on the year's working in 1913. For this, the necessity of importing such accessories as the tissue paper, acids and spirits is partly responsible.

Zinc refining.—The output of the Amagasaki works is reported to be 250 tons monthly; an increase to over 350 tons is spoken of.

Galvanised sheeting.—The Osaka works are reported to be turning out some 250 tons of galvanised sheets per month.

Metallic filament lamps.—The manufacture of tungsten lamps with imported filament has proved most profitable. The total output in Japan is from 5,000,000 to 6,000,000 lamps a year, of which the greater number are made in Osaka.

Saw mill.—A modern saw mill was erected in Osaka in 1913 at a cost of Y15,000., with an estimated output of 500,000 cubic feet of Hokkaido oak. The export of this latter has been growing of late, and it is expected that if this present undertaking is a success it will be followed by others of a similar nature. The machinery installed is American.

Hydro-electric power.—The completion of the works of the Ujigawa Hydro-Electric Power Company in June, 1913, came at a time most fortunate for the company, coinciding as it did with a period when the high price of coal had become a matter of concern to all industries using steam-power. The Company supplies power to both Osaka and Kyoto, the powerhouse being situated at Uji (about 9 miles from Kyoto and 22 miles from Osaka), from which point the three-phase, 60-cycle, alternating current is transmitted by aerial lines to Osaka at a pressure of 55,000 volts and to Kyoto at 11,000 volts. The equipment consists of six generators (one spare) of 4,500 kilowatts. Under present conditions during the day the load consists of motors entirely. At night, however, the lighting load is far in excess of the motor load, the principal customers of the company being the two electric light companies of Osaka and Kyoto respectively. Thus the day time output is 100,000 kilowatt-hours (maximum load 8,150 kilowatts,) whereas the night output is 290,000 kilowatt-hours (maximum load 23,000 kilowatts). A contract has been made with the Osaka municipality for the supply of power for the tram service from January, 1915, which will account for 4,000 kilowatts.

Though there are one or two small water-power plants operating in the Osaka district, this is the first undertaking on a large scale, and its working is likely to be followed with considerable interest. The construction works are reported to have cost 13,227,000 yen, which is considerably in excess of the original estimate, while the capital sunk in the undertaking amounts to 18,000,000 yen (say 1,800,000*l.*). The total steam-power used in Osaka proper may be placed at 100,000 horse-power, though if the whole industrial district be included the figure would be much higher. In 1913 the average daily consumption of coal was in the neighbourhood of 4,000 tons. The company's tariff ranges from 4½ sen (1.1*d*) to 3 sen (¾*d.*) per killowatt-hour, though contract prices appear to be considerably lower.

Smoke abatement.—The police authorities have under consideration the issue of regulations to prohibit the emission from factory chimneys of clouds of black smoke.

Electric and light railways.—The growth of electric railway systems continues. There are now (April, 1915) within a radius of 50 miles of Osaka close to 250 miles of double track in operation, and 80 miles more under construction or proposed in the near future. Several inclined cable tramways are on the tapis. The growth of light railways has been slower, the mileage of single track being under 50 miles. Another 50 miles are under construction. Numerous plans are projected, but hitherto have been held up by the difficulty of finding capital. On the whole it appears probable that but for the tightness of the money market a number of small systems would come into existence. A great part of the district lying south of a line drawn from Osaka to Nagoya is in a backward state owing to the lack of means of communication.

Motor cars and lorries.—There are at present 25 motor cars registered in Osaka. Though the narrowness of the streets militates against any extensive use of motor cars, it appears probable the demand will grow, if slowly. The amount of merchandise daily transported by drays and hand-carts in all parts of the city suggests a possible opening for motor lorries of a light type. The municipality have in use three motor-tower wagons for repairs of overhead wires, while the railway authorities have a motor van for parcels delivery. The results appear thoroughly satisfactory. Whether for pleasure or for practical purposes, a low price is in most cases an all-important consideration.

Public works. Harbour and waterways.—(1) A sum of 62,000 yen is to be expended on the construction of a new landing pier of 30 feet at Sakurajima. This is the point at which raw cotton is discharged, and as mentioned elsewhere, the handling of such goods at Osaka port is at present hindered by inadequate facilities, the existing pier being too small and accommodation in the goods-sheds insufficient. Additional sheds are to be built in 1915. (2) The long proposed plan of improving communication between the harbour and the city of Osaka by making a practicable waterway of the River Shirinashigawa is at last to be taken in hand at a cost, spread over three years, of 1,250,000 yen. This will afford an alternative means of access from the harbour to the city and relieve the congestion of the Ajikawa, at present the only direct waterway. The work is to be undertaken by the prefectural government.

There is also a proposal to cut a canal at right angles to these two rivers and connecting with a third, whose outlet lies outside the harbour enclosure. This work would be done by the municipality.

City hall.—A new city hall is in process of construction at a cost of 100,000*l.*, contributed by an Osaka citizen. The building, which is to be in foreign style, will cover an area of 2,500 square yards, and is to be completed by 1917.

Municipal trams.—The municipality now operate 27 double miles of tram. Extensions in 1914 provided for some 7 more at a cost of 5,000,000 yen.

Osaka Shosen Kaisha.—The Osaka Shosen Kaisha (Osaka Mercantile Steamship Company), which is second in importance in Japan to the Nippon Yusen Kaisha (Japan Mail Steamship Company) is increasing its capital from 16,500,000 yen (say 1,700,000*l.*) to 24,750,000 yen (2,500,000*l.*). Of the increase, however, only one-quarter is to be called up at present. The company, which until recently was entirely engaged in local services, has within recent years run lines of cargo steamers to Tacoma and to Bombay with considerable success, and is credited with the design of opening a line to Europe should a favourable opportunity occur.

Osaka ironworks.—The Osaka ironworks and shipbuilding yards, originally founded by a British subject, has been formed into a Japanese company with a capital of 6,000,000 yen. It owns at present shipbuilding yards capable of building vessels up to 4,000 tons, six dry docks, the largest of which is a little over 400 feet, a pipe foundry and accessory works for the making of boilers, &c. A new dock in process of construction will be 520 feet long, while it is proposed to extend the shipbuilding yards to provide for 10 building slips, the largest of which would be 480 feet long and 60 feet broad.

Population.—The total population of Osaka at the end of 1913, according to returns furnished by the municipality, was 1,388,909. The number of foreign residents, other than Chinese, 1,446.

Paper Pulp from Karafuto:—Paper-mill men are being heartily congratulated on the success achieved by the Karafuto Manure Company lately in starting pulp manufacture in the Northern colony, for Japanese paper mills, which have so far drawn almost all of their raw materials from foreign countries, particularly Austria and Norway, are thus placed in a partly independent position in respect to the supply of raw material.

The *Japan Times* says: "The company started the manufacture of pulp some time ago as an experiment while at the same time installing the plant. According to a report from Karafuto the plant having been fully installed, the actual operations were commenced yesterday. In every way the new enterprise is said to be a success." The *Japan Chronicle* referring to the Karafuto pulp enterprise says: "A steadying element may be found in the fact that the Mitsui firm has just started work in a new factory at Odomari, Karafuto. The trials of the new machinery have been carried out successfully, and the annual output henceforth is estimated at 1,000 tons or more. The check to imports through the war gives the new concern an encouraging start."

Motorcar Service Between Kalgan and Dolonor:—A Kalgan telegram to the "Sinwanpao" reports that the company, which is to run a motor car service between Kalgan and Dolonor, is buying land so as to have good roads for the service. The Lieutenant General of Chaher has arranged the matter with the Department concerned in Peking and there is no obstruction from the local people.

Sugar Factories in China:—The "China Times" reports: "The Department of Agriculture and Commerce has decided to effect measures to consolidate the sugar industries in China by (1) deciding the area to get materials, (2) not allowing more than two factories within one area, (3) the sugar refineries to receive government inspection, (4) those who are already engaged in the business should get licenses for the same within the next year."

Mongolian Industrial Co:—The Mongolian Industrial Co., which has had a very unlucky career ever since its establishment five years ago, has been at length dissolved. The company had a fairly auspicious start, and the total shares subscribed reached Tls. 520,000. The revolutionary disturbances, the Mongolian campaigns, etc., have put the Company in an exceedingly embarrassing situation. At the time of dissolution the Company was short by nearly Tls 20,000.

SHIPPING

New Chino-American Steamship Co.—According to a cablegram from the American minister at Peking, a corporation, distinct from the Government, to operate a mercantile marine company between China, American Gulf ports, and New York, is about to be consummated by responsible and capable Chinese financiers. The company is to be a joint-stock company, American and Chinese capital sharing equally. The dividends will be guaranteed by the Chinese Government in return for advantageous freight rates on select classes of certain exportable products. Word was given out later, according to the Chinese press, that the Board of Communications had decided to establish a big steamship Company with forty steamers at a cost of fifty million dollars. The government was to be responsible for twenty million dollars and the people were expected to subscribe the rest of the amount.

More Steamers for Manila.—Messrs. Macleod and Company have been appointed agents of the new steamship service of the Ellerman Line and the first steamer of the new line to call there was the City of Norwich, arriving on February 15, and sailing for Marseilles and London via Cebu and Singapore on February 17. The Ellerman line has entered the U. K. Conference and will accept cargo on conference terms and conditions. The steamers will carry hemp and copra, but will take no passengers. A significant fact of conditions prevailing in the Philippines is that this new Manila-United Kingdom line of steamers is booked full far into the future.

A report to the Department of Commerce from Consul General George E. Anderson, Hongkong, states that the Osaka Shosen Kaisha, the Tacoma line of Japanese steamers, has announced that beginning with the new year the steamers of that company will call regularly at Manila on their outward and homeward voyage from Hongkong to Tacoma, Wash. That is, every other steamer leaving Tacoma will proceed to Manila on its way out and every other steamer leaving Hongkong will return by way of Manila. The *Seattle Maru*, leaving Tacoma January 5, via Yokohama and Kobe, made the first voyage via Manila to Hongkong of this new service. From Hongkong the first steamer was the *Panama Maru*, leaving February 6, which sailed from Manila for Tacoma via Kobe and Yokohama February 11. Seven steamers are in the new service.

Japan Cuts Down Subsidies.—At a recent cabinet council in Japan, the question of curtailing altogether 3,300,000 yen in the government shipping subsidies for 1915, was finally decided in the affirmative. The term of the subsidies granted to the Nippon Yusen Kaisha, the Osaka Shosen Kaisha, and the Toyo Kisen Kaisha thus expire with the new year. At the last ordinary session of the Imperial diet, a bill providing for the renewal of the subsidies was introduced, but failed to pass the legislature, owing mainly to the retirement of the Yamamoto cabinet. At the council, the communication authorities urged the importance of opening a tri-weekly Panama service, with eight steamers, each of 6,000 tons, and asked for a subsidy of 1,600,000 yen to a company ordered by the government to operate the new service. This proposal was, however, shelved, owing to the fear that the inauguration of the new route might seriously affect the Tacoma, Seattle, and San Francisco services now maintained by the above companies.

N. Y. K. Orders New Steamers.—It is reported that the Nippon Yusen Kaisha has ordered nine new cargo boats from the Kawasaki Dockyard of Kobe and the Mitsu Bishi Shipyard of Nagasaki, in order to cope with success with the changed conditions of the European freight market after the war. In other directions also preparations are being pushed on energetically by the company for new and redoubled activity after the war. Recently the company held a full conference of the board and decided to build seven cargo boats of 4,000 tons each and five passenger and cargo boats of 3,000 tons each, to be run on the coastwise and Asiatic trade routes. By this new arrangement the company may be enabled to enlarge and improve the service in the Eastern seas and in the South Seas after the war, when the decrease in the foreign shipping in these waters may cause a remarkable increase in the demands upon this country's shipping.

On the Calcutta route the company's effort to improve and enlarge the service is bearing fruit. Since the withdrawal of a rival company from the field the Nippon Yusen Kaisha, monopolising the trade, has done everything in its power to increase traffic facilities in those waters. Even when the Emden was ranging the seas trade was maintained, though somewhat erratically. Thanks to this tenacity of the company in the face of danger the German trade in those parts of India has been utterly upset and in its stead Japanese trade is steadily being built up. Glassware and matches, which were supplied by Germans before the war, are, for instance, now supplied by Japanese entirely.

Merger Again Rumored.—Negotiations for the union, which were started at the instance of the Japanese Communications authorities, have been resumed between the Nippon Yusen Kaisha and the Toyo Kisen Kaisha, to amalgamate the two lines. At the time when the previous negotiations were started the condition of the Toyo Kisen Kaisha was alleged to be anything but enviable, as the ratio of the receipts to working expenses was falling steadily at that time. This unfavourable result of business was attributed by the authorities to the fact that the company's boats were specially designed for passenger service and not for freight and the advisability of fusing the concern with the Nippon Yusen Kaisha was suggested by them. It is said that the reasons for the resumption of the negotiations are along the same lines.

Japan-Java Line.—The Japanese line of steamers which has been running from Japan to Java ports under a Government subsidy for the past two years has been formed into the South Sea Steamship Co. under the Japanese flag and with a capital of about $800,000.

Japan-South Seas Service.—A scheme of opening a steamship service between Japan and the newly occupied islands in the South Seas is maturing. The South Manchuria S.S. Co., Ltd., Dairen, is reported to have started a movement to open a triangular steamer service between Japan, Singapore, and the above islands, under Government subsidy. Failing to receive the desired Government assistance, the new route will be limited to between Singapore and the nearer South Sea Islands, such as Java and Borneo.

Harbin Maru in Service.—Early in March, the new O. S. K. steamer *Harbin Maru*, 5,169 tons, manned by Capt. S. Obsumi with a complement of 117 officers and crew, made her first entry into the port of Dairen, bringing 1,172 tons cargo and 156 passengers. The new liner was constructed by the Kawasaki Dockyard Co., Kobe, and is a model of luxury and comfort Her wireless telegraph apparatus is of the Communications Department system invented by Mr. Saeki, save for the switchboard, which is an American patent. The apparatus is fitted with Torikata Detectors, which enables her to communicate with a steamer at a distance of 1,500 miles under any weather conditions. The power of the apparatus is said to compare well with installations of the Atlantic liners.

New P. & O. Feeder.—The Peninsular and Oriental Ss. Co., is building a steamer of 1,000 tons exclusively for the local trade of the Malay Archipelago and to act as a feeder to the Company's main line. She will be known as the *Mata Hari* (Eye of Day) and will be seen in Siamese and nearby waters early in the spring.

New Steamer in India Trade.—The *Morvada*, a new first-class passenger steamer of the British India Line, arrived at Karachi on its first voyage from London via Bombay,

early in this year. The vessel is intended for the Bombay and Karachi service in connection with the Peninsular and Oriental Line. It was built on the Tyne, and is 450 feet long, with 58 feet breadth, with gross tonnage 8,193 and net tonnage 5,119 Its average speed is 14 knots.

Japan and the Philippines.—The 4,000 odd Japanese now in Mindanao, the southernmost island of the Philippine Archipelago, have found it so profitable that plans are on foot for a wholesale colonization of that island. A hint is thrown out by the Foreign Office that having settled in the southern island, the Nipponese propose to sweep northward in a great colonization scheme. Following is a translation of the statement given out officially by the Foreign Office on February 24:

"The development of resources in the southern parts of the Philippine Islands, especially Mindanao Island, has made marked progress of late. Various industries have been started and are making fair headway. Inconvenient means of communication, particularly of shipping facilities, in those regions, has been a matter of great regret and the hope was expressed from time to time to make the N. Y. K. Australian liners call at Zamboanga, the principal town of Mindanao Island. The Philippine Government authorities were in favour of the suggested scheme in view of great benefit of the scheme to the development of insular industry and trade. The opening of a regular steamer service between Mindanao Island and other parts of the Philippines and elsewhere will greatly facilitate the transportation of labour emigrants greatly needed in the exploitation of the undeveloped region in the northern part of the island, in addition to benefiting the exportation of copra and hemp, principal staple products of the island.

"The Imperial Japanese Government some time ago caused Consul-General Tsunezo Sugimura at Manila, to make investigations into the industrial and commercial conditions of those regions with a view to opening new steamship service between the island and other places on the N. Y. K. Australian line. As the result of the investigation the Government ordered the N. Y. K. to let its Australian liners call at Zamboanga on their way to and from Sydney. The service was begun with the liner Nikko Maru, which entered the port of Mindanao on January 21st. The steamer, which was the first liner to make a call at the port, met with an enthusiastic ovation from both American officials and public and Japanese residents there. The Governor General of the Philippines writing to the Japanese Consul-General expressed his thanks as well as those of Americans and the Filipinos for the Consul-General's kind efforts in establishing the steamer service to the island, which has been so much coveted by the islanders.

"The Governor General further expressed his belief that the new enterprise would unmistakably contribute to promoting the interests alike of Americans and of Japanese."

In regard to the above it may be questioned whether the line will be such an advantage to any but the Japanese residents of Mindanao, since the United States shipping laws impose heavy penalties on passengers traveling under a foreign flag between two American ports such as Zamboanga and Manila, so that the only effect may be to deprive Manila of a considerable transshipment tonnage and the interisland steamers of the passengers and freight that will now go direct to Japan.

Japanese Shipping.—According to the investigation of the Department of Communications, the total number of steamships in Japan on December 1st, 1914, was 2,133 with a total tonnage of 1,577,025. The total of sailing vessels was 7,943 with a total tonnage of 513,244. Besides these, the vessels calculated in koku capacity were 1,345 with a total of 423,616 koku.

Japan's New Destroyers.—Torpedo destroyers which have been launched recently at various docks are as follows:—The Matsu and Kashiwa at the Mitsubishi Dock, February 15; the Raba, at the Yokesuka naval dock, February 15; Sakaki at the Saseho Naval Dock, February 18; the Kusunoki at the Kawasaki Dock, February 26th, the Ume at the same dock on March 5th, and the Katsura at the Kure naval dock on March 20. The launchings of the Koede and Kiri, not announced as yet, were expected to take place in April. The Urakode and Yekode, two destroyers, building in England, will be launched in June.

Several new vessels have been launched at the Mitsubishi dock at Nagasaki. The trial of the Toyooka Maru, 7,640 tons, took place early in February and she was turned over to the N. Y. K. on March 21. The Toyama Maru, sister vessel of the Toyooka Maru, was launched on March 20th. The Kawachi Maru, 9,700 tons, of the Osaka Shosen will be launched in May. Preparations are now making for the construction of the Hiuga, a battleship, and three N. Y. K. vessels of 7,500 tons, the contract for which recently was made.

MINES, MINERALS AND THE METAL TRADE

Hanyang Iron Works.—The Government expert sent to examine the Hanyang Iron Works, with reference to government ownership, says in his report that there are 40 foreign engineers and 8,050 Chinese laborers working in the Hanyang Iron Works. The plant can produce 15,000 tons of pig iron every month, steel rails to the amount of 7,000 tons, and practically unlimited steel plates and nails. The ground occupied by the works is upwards of 100,000 square feet. It has a capital of $20,000,-000.

According to the Works Secretary's Annual report, the work at Hankow, Tayeh and Pinghsiang was carried on smoothly during the past year. With the exception of the destruction of the iron bridge at Liling, Hunan, owing to a sudden flood which caused a shortage of thirty thousand tons of coal being transported to Hanyang, there was no other misfortune. Owing to the lack of coke two furnaces had a reduced output of a thousand tons of iron. The output of pig for the past year is estimated at 135,000 tons, while steel reached a total of 98,536 tons. Nine hundred tons of bolts, etc,, and one thousand two hundred tons of fire bricks also were made.

At Pinghsiang Colliery, 560,000 tons of coal was produced, of which 165,000 tons was turned into coke. The Tayeh mine produced 480,000 tons of iron ore.

During the past year at the Hanyang works, a No. 4 blast furnace and a No. 7 steel furnace were constructed, while extensions were made in the steel plate factory, rail mill and fire brick factories.

At Tayeh a new iron mine has been purchased, and it is expected that in the coming year 700,000 tons of iron ore can be turned out. A new furnace will also be constructed at Yuanchiahu to the west of Shihuiyoo. At Pinghsiang new shafts will be opened and by April 640,000 tons of coal can be mined.

China's Coal Output.—According to the report of the Ministry of Agriculture and Commerce the total output of coal throughout the whole country last year amounts to 9,272,000 tons. The output of each province is as follows:

	Tons.
Manchuria	840,000
Hupeh	100,000
Chihli	2,160,000
Anhui	30,000
Shansi	2,500,000
Shantung	932,000
Hunan	300,000
Szechuan	800,000
Kiangsi	800,000
Honan	500,000
Shensi	50,000
Kwantung	50,000
Kwangsi	50,000
Yunnan	30,000
Total	9,272,000

Fushun Coal Export.—The Fushun coal export returns for the port of Dairen for the month of January last give a total of 45,612 tons comprising 45,512 tons shipped by steamers and the balance by junks, showing a decrease of 7,453 tons and 15,631 tons from the preceding month and the corresponding period of last year respectively. Returns for February give a total of 47,718 tons, comprising 47,696 tons shipped by steamers and the balance by junks, showing an increase of 2,064 over the preceding month but a decrease of 12,417 tons from the corresponding period of last year.

The principal ports of destination follow:—

	Tons.		Tons
Yokohama	3,500	Nanao	3,000
Osaka	5,700	Tokuyama	3,280
Fusan	3,320	Shanghai	7,980
Hongkong	4,000	Manila	4,850
Java	8,850	Moji	1,820

Lack only Capitalists.—The Peking-Hankow Railway has submitted the report under the instructions of the Central Government dealing with the mining enterprises along the whole line. The report recommended the Fong Shan Hsien Coal as being of superior quality. About 160 mines are within the district but there is lack of capitalists to organise Companies to replace the native method of operation by machinery. There are several big mining companies along the line, Pekin Syndicate, Lien Chen Mining Bureau, Chung Chow Mining Company, Pei Yang Government Mine. Twenty-three small companies have suspended their work in different districts.

Colliery Near Taonanfu.—A Chinese company was recently formed at Taonanfu under the title of Paofeng Colliery Co. with Mr. Tan-shao-chang, a mining expert, as President and Mr. Li-chih-chu, Manager. The colliery is located in the side of Heiting Hill near Taonanfu. The extent of the coal seam is not yet known, but the coal is found to be of good quality.

Iron Mines in Fengtien.—With reference to the question of the nationalisation of the iron mines in Fengtien, sometime ago a special delegate was sent to that province to investigate the number of such mines in that province. His report to the Government states that there are no fewer than 57 iron mines in Fengtien, nearly all of which yield abundant iron ores of excellent quality. The Government has decided to take steps to nationalise all these mines, with the exception of one at Penchihu, which is being worked.

Manchuria's Mineral Wealth.—The region between Penchihu and Chienchang on the Upper Taitzu abounds in mineral wealth of various kinds, such as coal, iron and sulphur. The colliery at Niuhsintai, 9 miles from Penchihu, has been in operation under joint Sino-Japanese management since last summer. Already a light rail line, 16 miles in length, is being operated between the colliery and Penchihu under the S. M. R. Co., management. Japanese prospectors, who made investigations on the ground last summer, were strongly impressed with the variety and immensity of the mineral resources between Niuhsintai and Chienchang and the existing light rail is to be extended up to Chienchang in course of time, the required capital to be furnished by the

Penchihu Colliery & Mining Co., to the extent of 70 per cent., the remainder being supplied by the Chinese. It is understood that in this particular enterprise the South Manchuria Railway Company is to act on behalf of the Penchihu Co. The matter is said to have been sanctioned by the Peking Government.

Hungshan Colliery.—Pumping work at Hungshan Colliery is progressing and mining of the first pit is to be started at the end of March. The daily output will be about 500 tons at the beginning but, as the mining equipments are completed, the annual output will be increased to 700-800,000 tons.

Chekiang Coal Mines.—In a statement to the Central Government, the Chekiang Government, completing its listing of coal mines, fixes the number of these at thirty-nine.

Gold Mine in Chienshan Hills.—Two Chinese merchants of Liaoyang recently struck a gold mine in Chienshan Hills near Tangkangtzu Hot Springs which are noted for their charming scenery. They propose to form a joint stock company for operating the mine. As a preliminary step they have applied to the Mine Superintendent's Office at Mukden for the preferential right to work the find.

Silver Mine in Kiangsi.—Reports from Kiangsi state that the gentry there are trying to raise capital amounting to $50,000,000 to develop a silver mine in Taihsin-hsien, which is called Tungkungshan. The mine covers an area of ten square miles, and is considered the richest mineral resource of Kiangsi. It was worked during the Tang dynasty.

Chuhsan Copper Mine.—Mr. Sung Wei-tsen, the manager of the copper mines in the Chuhsan district, has recently petitioned the civil governor, Mr. Tan, to grant the privilege of free exportation of ore to encourage the development of the mine.

Find Gold Ores.—The Chao Fu Company mining in Tayeh District, has submitted some gold ores which they have recently discovered in the Tayeh District, to the Mining Superintendent's office for official technical assaying.

Metals in Chekiang.—According to the report submitted by the Chekiang Province to the Board of Industry and Commerce there are thirty-five metallic mines in the Province.

Chinese Antimony.—A Chinese mining and smelting company has opened an office in New York for the sale of antimony in the United States. Through the New York office of the Bureau of Foreign and Domestic Commerce it was put in touch with a concern which has purchased $40,000 worth of its product.

Mining in Korea.—The Oriental Consolidated Mining Company (Korea) has declared a dividend of G. $0.50 per share, which is payable in New York.

Gumaos Gold Output.—According to the Philippine Exploration Co. of Manila the results of the work on the Gumaos property during February, was gold recovered, 1,130 ounces.

Philippine Gold in 1914.—The division of the Bureau of Science, in a preliminary estimate given out, places the value of the gold produced in the Philippine Islands during the year 1914 at 2,406,867.31 pesos. These figures are not final inasmuch as returns from the various mining companies are not yet all in, and it is possible that the final figures will vary slightly from the above total. The 1914 production is nearly 30 per cent. greater than the production for the year 1913, which was 1,736,724 pesos. A little more than half of the 1914 production is the result of lode mining, the balance having been produced by dredging. The estimated value of the silver produced in 1914 is 16,000 pesos. There is no mining of silver ores in the Philippines at present, the above production having been obtained from the mining of gold ores, or dredging of placer gold; these operations yield a little silver which occurs as an alloy with the gold.

Gold Discovered at Lanao, P. I.—Word has been brought to Zamboanga that Major Allen Smith, Philippine Scouts, and others have discovered gold bearing quartz at Lanao. The matter was kept quiet until the assay was made at Manila and a report has been received that it runs P27.00 to the ton. Every one in Lanao, it is said, has the gold fever and is staking out claims. This quartz is of a reddish color and was not known to contain gold until Major Smith took samples to Manila.

Tin Output in Malaysia.—According to telegraphic information received by the Malay States Information Agency in London, the exports of tin from Federated Malay States during the six months from July 1 to December 31, 1914, amounted to 24,140 tons as compared with 26,244 tons and 25,061 tons in the corresponding periods of 1913 and 1912, respectively. The total exports of tin for the year 1914 amounted to 49,042 tons as compared with 50,128 tons in the previous year and 48,250 tons in 1912.

Tongkah Harbour TinDredging.—The 1914 report states that the ground dredged during the year to Sept. 30 was 2,199,408 cubic yards, producing 1,126 tons of tin oxide, as against 3,336,180 cubic yards treated last year, producing 1,339 tons. The average yield this year was 1.147 lbs. per cubic yard, as against ·90 lb. last year. The value of tin output net to the company, exclusive of royalty, was £108,052, an average of £95 19s. 2d. per ton of ore, which compares with £118 7s. 1d. per ton. The working account shows a credit of £48,253. The dredging costs amounted to £52,605, or 5.74d. per cubic yard (against 3.816d. last year), whilst other charges amounted to £7,192. The balance to credit of profit and loss at Sept. 30, 1914, was £73,476. After providing for payments made to the Government of Siam, depreciation of plant, and all charges incidental to working the concession and managing the company, profit for the year was £34,568. Four dividends, aggregating 35 per cent., or 7s. per share, have been paid, absorbing £52,500, and after deducting dividend tax there remained £54,232.

The output of the Tongkah Harbour Tin Dredging Co., Ltd., for January was 88 tons.

The output of the Deebook Tin Dredging Co., Ltd. for January was 522 piculs, 53,850 yards, in 538 hours.

The output of Rahman Hydraulic Tin Limited, during January was 600 piculs.

The output of the Rahman Tin Co., Ltd., in January, was 634 piculs: Mill ore Pls. 450.43; Tribute ore Pls. 183.34.

The estimated output in respect of the Menglembu Lode Syndicate, Limited, for the month of January was 250 piculs, approximate value $10,300.

Japan's Mineral Production.—According to official investigations Japan's mineral production for 1914 is as follows.

Gold	206,112	momme
Silver	3,676,500	,,
Copper	9,440,409	kin
Iron	1,118,039	kwan
Kerosene	243,368	koku
Sulphur	8,217,465	kin

The only items which suffered any decrease are silver and iron, all other items having witnessed more or less important appreciation. The most prominent increase is in gold, which may be attributed to the increased activities of the Kuhara Mining Company and the Mitsui Mining Department in this line. The Kuhara Company carried on gold refining last year, buying ores from the different mines in the country. The working of a new mine in Kagoshima by the Mitsui Firm was an important factor in the gold product. For the appreciation in the yield of kerosene the much-talked-of gush at the Kurokawa well may be mentioned.

Japan's Coal Output.—In Japan more than 21,000,000 tons of coal were mined last year. Over 3,000,000 tons were used to coal foreign steamers. Cheap coal from China takes the place in Japan of the better qualities sold to foreigners. But in Kyushu coal stocks are seen to be accumulating lately, the stock at the principal depots reaching more than 1,000,000 tons, or three times the record of 1913.

Coal in Shantung.—Poshan Colliery is the only one worked by the Japanese military authorities in Shantung since the reopening of the Tsingtao-Tsinan Railway. It puts out about 70,000 pounds coal a day, which leaves little to spare for private customers. The price went up to silver yen 13.50 per ton until, with the opening of Tsingtao to merchantmen, Fushun coal began to be imported, causing the price to sober down to a more normal footing.

Coal at Liaoyang.—Near Liaoyang the Weimingshan coal can compete with Yentai coal. The two collieries are situated near one other and the former is mined by Chinese. Its output is inferior in quality to Yentai coal, but, the cost of production being very low, the Chinese underbid Yentai coal. The price of Yentai coal was reduced to 25 sen silver per 100 *kin* some time ago. This increased the sales total to 100 tons a day at Liaoyang alone at the expense of Weimingshan coal. Niuhsintai coal is in demand for heating purposes at 35 sen silver per 100 *kin*.

Formosan Coal and Copper.—The production of copper in Formosa for 1913 amounted to 1,547 metric tons valued at about £101,000. The total output of the mines was taken by Japan. The total output of coal during the same year was 319,370 tons valued at £123,260, giving an increase of 43,125 tons and £23,570 over preceding years.

Philippine Asphalt.—Since the announcement of a discovery of gilsonite in the Philippine Islands, the following data have been obtained:

The deposit is a few miles inland from the west coast of the island of Leyte, near the northern end of the island, between the towns of Villaba and Leyte. Large samples of this mineral have been sent to the Insular Bureau of Science, and several competent geologists have examined the deposit for private capital and have supplied the bureau with some of their data concerning the deposit. The occurrence of the mineral is described by a competent observer as a vein or bed outcropping with a thickness of several feet across the floor of a gully and apparently dipping into the hills on either side at an angle of 40°. The observer was unable to determine whether the material is a bedded deposit conforming to the dip and strike of the shale in which it occurs or whether it is a vein deposit cutting across the shale beds. Near the outcrop there is a petroleum seep from which a heavy oil escapes in small quantity.

A number of mineral claims have been located on the ground in the vicinity of the principal outcrop and some development work has been done by the Bryan-Landon Co., of Iloilo and Cebu. The observer is of the opinion that the amount mined is probably not in

excess of 30 tons. It is said that the inflow of ground water and the necessity for heavy timbering to support the shale roof seriously retard the exploitation of this deposit. The following analysis of a representative sample of the deposit is supplied by the Bureau of Science of the Philippine Islands: Character, solid and brittle; color, dull, brownish black; fracture, perfect conchoidal; hardness, 2; specific gravity, 1.026; penetration at 25° C., 6°; loss of weight at temperature of 163° C. for five hours, 3.28 per cent; total bitumen (soluble in CS_2), 93.79 per cent; organic insoluble, 1 per cent; mineral matter, 5.21 per cent; fixed carbon, 7.68 per cent. As stated, this material is classed as uintahite or gilsonite rather than asphalt proper. It is regarded as suitable for use as a protective coating or paint, as a binder in bitulithic paving materials, and as a roofing material. In quality it is considered equal to the gilsonite that sells for $10 to $20 per ton in the American market.

Sulphur in Japan.—At first the sulphur market appeared to be unaffected by the war; exports continued plentiful and prices firm, but the increased price of wheat has cut shipments to the Japanese market, hence there is less hold space available for sulphur as return cargo. The home demand is also somewhat in defect, and there are now 10,000 tons of sulphur congesting the market. About 8,000 tons of this are held in Hokkaido by the syndicate of which the Mitsui firm is at the head. Osaka merchants are now ready to sell the best Hokkaido sulphur at 30 yen $(14.94) per ton for cash payment. Unless there is an improvement the smaller sulphur mines will have to close down. Bar sulphur is in good demand for special purposes.

FINANCIAL NOTES

Six Millions for Improvements.—In the bill submitted by the Governor General to the Commission to release P6,000,000 of the gold standard, it is proposed to devote between two and three million pesos to purposes of the sugar central bill, P2,500,000 to the extension of credit of the Manila Railway company to enable it to continue its construction work, and P1,500,000 to the building of a new custom house on the reclaimed area of Manila.

The gold standard fund amounts to P18,500,000. Of that amount P8,500,000 have been loaned to the provinces and to the Manila Railway company, P7,500,000 are invested in the United States in the form of time deposits, P1,700,000 are held on current account in the United States for exchange transactions, and there are P800,000 in the insular treasury. It is now proposed to take some P6,000,000 of the P7,500,000 invested in the United States on time deposit, and apply that amount to the purposes already enumerated. Any fear that might be felt as to the stability of our currency as a result of this reduction of the gold standard fund is set at rest by assurances from Mr. Conant, responsible, with former Secretary Ide, for the present currency system. Authority has also been given by the secretary of war. It is felt now that the large fund originally thought necessary to guarantee the parity of Philippine currency is no longer needed, as the system on which it is based has demonstrated its soundness.

Tokyo Still Gloomy.—In spite of the reported tendency toward revival in the market, the Tokyo Clearing House report for the month of March presented as gloomy an aspect as ever, for the figures reported amounting to 324,313.000 *yen* in round figures show a falling-off by 116,784,000 *yen* from the record for the preceding month and by 20,328,000 *yen* as compared with the corresponding term of last year. The number of bills cleared also shows a falling-off of some magnitude.

Borrows at 8 Per Cent.—The Kawasaki Ship-building Company has decided to issue a loan of three million yen. Though the conditions of issue are now under consideration, it is reported that the interest will be 8 per cent, and redemption will be made in ten years, the first three years being unredeemed.

Hypothec Bank's New Issue.—The Hypothec Bank of Japan has issued a loan of Y4,000,000 bearing interest at 7 per cent; face value of the bonds is 50 yen, issued at par. The first plan of the bank was a loan of three million yen, but the amount was increased later in consideration of the good prospect shown in the markets in the country districts. One advantage of the new bond is that it will be accepted for security at the Bank of Japan.

Japan's Railway Loan.—The necessity of repaying part of the railway loans in London has brought about a thorough change in the Government programme for financing the State Railways. In the programme drawn up some time ago 18,000,000 yen in round numbers was to be advanced to the Railway Board as a fund for repairing and constructing those lines designed for the coming fiscal year out of the outstanding national debt redemption fund, which amounts to 20,000,000 yen in round numbers. A half of this amount is now forced to go for the repayment of part of the London loans, thus compelling the Government either to alter the railway programme or to raise funds in some other way. It is learned that the Government will advance the remnant of the national debt redemption fund to the Railway Board, and the shortage to the amount of 8,100,000 yen will be made good from the Deposit Section funds, thus enabling the Railway Board to continue the works already set about. This new measure will result in further decreasing the balance held in the Treasury.

Drain on Japan's Treasury.—The Japanese Government, owing to a heavy drain on the National Treasury, decided to borrow from the Bank of Japan Y40,-50,000,000 in April.

Banks Offer Balance.—The Chinese Government, early in March, received an intimation from the Diplomatic Corps that the sum of £1,375,000 sterling, lying in the Quintuple Banks, being the balance of the amount of £2,000,000 set aside under the terms of the Reorganisation Loan, for payment and indemnity of foreign losses during the recent revolution, was at the disposal of the Chinese Government.

No More Foreign Loans.—The Ministry of Finance has notified the Provinces that, as the result of the overhauling of the Government taxes and other revenues, the income of the country is now sufficient to defray its expenses including the payment of foreign loans and indemnities. Hereafter Provincial Governments will not be allowed to contract even small foreign loans.

Internal Loan of 1915.—The Chinese Press states that the Government has decided to raise an Internal Loan for the fourth year of the Republic, namely 1915, for a total amount of $50,000,000 to be distributed over the provinces in the following scale:

Kwangtung, $5,000,000; Fukien, $3,500,000; Kiangsu, $3,000,000; Hupeh, $3,000,000; Szechuan, $3,000,000; Chihli, $2,800,000; Chekiang, $2,500,000; Shantung, $2,500,000; Shansi, $2,500,000; Shensi, $300,000; the other provinces are all under one million dollars each.

China's Revenue Increasing.—Chang Hu, Director of the Salt Administration, has stated to a representative of the "Peking Gazette" that China would have no financial difficulties at all, if the land tax and other financial sources were properly reformed. The land tax alone could yield 300 million Dollars a year to the Peking Government and China, he said, need not beg entrance at the foreign bourses with her hat in her hand.

The authorities estimate that the land-tax will yield the following actual revenue for the current year 1915, in the various provinces. Fengtien $940,256; Kirin $702,223; Heilungkiang $362,017; Chihli $4,668,755; The Metropolitan District $5,083; Kiangsu $8,661,445; Anhui $2,484,330; Shantung $6,677,-421; Shansi $5,418,522; Honan $7,660,060; Shensi $2,855,607; Kansu $395,600; Sinchiang $234,833; Fukien $1,000,013; Chekiang $4,182,375; Kiangsi $4,382,557; Hupeh $2,140,-173; Hunan $2,235,012; Szechuan $3,440,772; Szechuan Frontier Regions $06,428; Kuangtung $2,578,053; Kuangsi $704,712; Yunnan $1,263,-031; Kueichow $336,245; Jehol $102,008; Chahar $15,207; Hsuiyuan $101,078; Total $65,171,216.

According to another estimate of the Central Government, the revenue of China for 1915 will consist of the following items:—

Land Tax, $78,000,000; Salt Gabelle, $76,000,000; Customs Receipts, $62,000,000; Title Deeds Examination Fees, $13,000,000; House Tax, $6,000,000; Consumption Tax, $15,000,000; Tax on Spirit and Tobacco, $15,000,000; Mining Tax, $2,000,000; Business Tax, $10,000,000; Income Tax, $5,000,000; Inheritance Tax, $2,000,000; Travelling Tax, $3,000,000; Tax on Convertible Notes, $3,000,-000; Stamp Duty, $5,000,000; Tax on Monopoly of Weights and Measures, $2,000,-000; Marriage License, $3,000,000; Minting Coins, $20,000,000; Government Works, $20,000,000; A total of $340,000,000.

Philippine Internal Revenue.—The report of Internal Revenue Collector Rafferty for 1914 shows a net increase of P375,178.43 in the amount of internal revenue collected over 1913, and an increase of P412,562.24 in the insular government's share of the revenues over the same period. This increase, however, resulted from over P400,000 extra being collected during the last ten days of the year 1914 from manufacturers seeking to anticipate the new and heavier tax in force on January 1, 1915. The report also shows an increase of P34,620.36 in the amount of revenue collected on total business done by merchants, manufacturers, etc., apparently showing that despite the crisis the business of the islands made some advance. The bureau of internal revenue, however, claims that the increase of the revenue from that source was due to a better system of collecting instituted by Collector Rafferty.

New Sugar Co. Loan.—The Bank of Taiwan (Formosa) is reported to have accepted the Dai Nippon Sugar Refining Company's fresh loan to the amount of 2,500,000 yen, which the latter has planned to make for the readjustment of its debts.

PERSONAL

We regret to record the death at the age of 35 of Mr. Ernst Seidler, M.E., who was in charge of the machinery department of Messrs. Melchers & Company at Shanghai. Mr. Seidler had been in Shanghai for several years, and was extremely popular with all those with whom he had social or business relations.

Mr. F. C. Banham has been appointed Manager of the business of Messrs. Heywood and Clark, Ltd., in the Far East in succession to the late Mr. W. D. Graham.

Sir Richard Dane, Co-Chief Inspector of the Central Salt Administration of China recently returned from an extensive tour of Yunnan and Szechuan Provinces.

IMMIGRATION.

Population of Japan.—According to the latest census taken by the Government in connection with the compilation of the poll-book for the general election, the following numbers of general and voting population were found:—

Total population (Chosen, Karafuto and Taiwan not included)	55,125,272
Number of houses	7,734,340
Voters for Lower House	1,503,650
Voters for Local Assemblies ..	2,440,745

Japanese Abroad.—The Commercial Bureau of the Foreign Office has recently published statistics of Japanese residents in China, British India and other foreign countries, classified according to their domiciles and vocations. According to the statistics the number resident in foreign lands at the end of July 1914 was 358,711 persons (239,496 males and 119,215 females), the figure showing an increase of 117,440 over that of the corresponding time of the previous year. The figures are tabulated as follows:—

China (including Manchuria)	121,956
British India, Australia and other South Sea islands	6,661
The United States	171,581
Europe including Canada and European Russia..	3,945

With regard to the occupations, farm labourers are in greatest number. Of 1'1,956 residents in China more than 6,000 are engaged in commercial and industrial lines.

Japanese in Shantung.—As a result of the sudden inrush of Japanese into Shantung immediately after the fall of Tsingtau, the Japanese in that province have now reached a significant number. The following is a list of the number of Japanese in various towns in Shantung compiled last month. Tsingtau, 5,270; Tsinanfu, 597; Fangtze, 34; Litsun, 2,098; Weihsien, 56; Taitungcheng, 994; Changtien, 45; Kiaohsien, 67; Haoshan, 325; Kaomi, 78; a total of 9,564.

Japanese in Manchuria.—Eliminating the garrison, the number of Japanese residents in Manchuria, which was over 40,000 in 1907, increased to above 73,000 at the end of 1914. But the rate of increase of the Japanese still compares poorly with that of the Chinese. As an illustration of this, the number of the Chinese, which was only 8,000 at the end of 1909, had increased to 41,000 at the end of last year.

According to a Japanese newspaper, a census taken at the end of last month by the Japanese authorities shows that there are 48,596 Japanese immigrants in the Kwantung Province, and 32,769 people in the adjacent territory along the Manchurian railway. This shows an increase of 3,000 immigrants against the census taken last year and 9,000 against that of the year before last. It is estimated that at the present rate of increase, Japan will have at the end of this year 100,000 colonists in Manchuria.

Japanese in Korea.—At the end of November last, the Japanese population in Chosen was 293,530, of which 158,284 were men and boys and 135,246 women and girls. This indicates an increase of 21,310 persons in one year.

S. M. Railway Colonists.—The Land Department of the S. M. R. Co. is satisfied with the results of its experiment in settling a number of Japanese agriculturists in the Railway Area at Tiehling. It is planning to introduce twenty new settlers with their families into the Railway Area at Tiehling and Kungchuling this year.

Fewer go to Singapore.—From January to November, 147,150 Chinese immigrants arrived in Singapore against 218,536 in 1913; and a yearly average 1904-13 of 192,685.

Heilungkiang Colonization.—According to reliable returns, Fengtien Province is said to contain about 27,000 paupers. The Chinese authorities intended to settle them upon waste land in Heilungkiang last year. Gov. Chang, who is moved by the alarming fatalities from the cold, has decided to carry out the colonization plan and has drawn S. Y60,000 from the Provincial treasury for the purpose. The transportation of indigent emigrants was begun on March 2nd.

On to the Philippines.—The *Tokyo Mainichi* is informed that as a result of investigation of conditions in the South Seas it was found that in time of the harvest of rubber Japanese laborers will be needed to do the work, although as laborers the cheap natives may be better to employ than the Japanese, in point of price. But the Japanese are the better workers. Then Japan should make preparations to send men to the South Sea Islands. Nay, Japan should not confine her efforts to the islands taken from Germany. The Philippines are only a step from Japan's Formosa. There are already 2,000 Japanese in the Philippines. More should be sent, as they are welcomed by the Americans there.

Those islands are welcoming the Japanese, as if they were of their own race. In olden times some Japanese in order to worship Christ left Japan and settled down in different parts of the Philippines. Their descendants are to be found there, to the number of 400,000. The name of the race of Bugis(?) may have come from the Japanese word Buke, which means a family of warriors. At any rate, emigration to the South Sea Islands should be encouraged. The Philippines are suitable for Japanese immigration. One man can gain 50 yen a month by raising hemp. Deducting living expenses, he should be able to save 30 yen a month. There are other things which can be raised besides hemp. There should be a systematic emigration started in Japan to these South Sea Islands.

Japan to Return Islands.—"It is officially announced on January 22 that the German Islands in the South-West Pacific seized by the Japanese are to be handed over to an Australian naval and military expedition in accordance with the promise made by Japan earlier in the war," says the *London and China Express*. "A force will be despatched by the Commonwealth, and will remain in occupation until the termination of the war, when the matter of the ultimate disposal of the Islands will be a question for consideration by the Allied Powers. It is too soon yet to discuss what will be the final destiny, but we may note the loyalty that Japan has displayed in the matter. It would have been quite legitimate for our Ally to have herself held the Islands until their eventual fate is determined at the close of the war."

Later reports are that a colony of Japanese already is in occupation of the more favorably situated islands, while two expeditions of scientists have been sent to investigate resources of this new Japanese territory.

Manila's Population.—The annual report of the Director of Health at Manila states that, contrary to general opinion, the number of Americans increased during the past year in Manila from 4,174 to 5,474, a gain of 1,300.

The number of Spaniards also increased by over 1,000. The census of Manila shows an increase of 32,534 over the year 1910, the city now containing a population of 266,943, divided as to nationality as follows:—Americans, 5,474; Filipinos, 236,946; Spaniards, 4,406; Other Europeans, 1,506; Chinese, 16,657; Other nationalities, 1,960.

PETROLEUM

Japanese Petroleum Production—According to consular reports, the total output of petroleum in Niigata Prefecture during the first half of last year amounted to 882,962 koku (33,958,719 gallons), an increase of 81,373 koku (3,129,606 gallons) on the figures for the corresponding months last year.

The petroleum industry in Japan is almost entirely in the hands of two companies, the Nippon and the Hoden. The former was promoted at Amase, Niigata Prefecture, in 1888, with $55,000 capital, which has been increased to $5,000,000. The latter was formed at Nagaoka in 1893, with $7,500 capital, which has been increased to $7,500,000. Japan's daily output of oil was about 5,000 koku (192,300 gallons), 90 per cent. of which was produced by the two companies The Nippon Petroleum Company's Kurokawa well, however, has recently changed the whole situation, its daily capacity of 10,000 koku (384,600 gallons) thus greatly increasing Japan's output.

This increase has not been an unmixed blessing since the sale of lighting oil has fallen off steadily as the consumption of gas and electricity for lighting purposes has increased. The yield of kerosene in this country has been on the steady increase as the result of employing rotary borers at the different oil wells in the latter years. In the past year, for instance, the whole yield reached 2,400,000 koku, a gain by more than 600,000 koku on the previous year. The consumption on the other hand fell off to an unproportionately large extent. Therefore, the stock in hand has been accumulated to a surprising degree.

Shell Company Holdings.—The Shell Transport and Trading Company has reported that the products owned or controlled by their associated companies in 1914 amounted to: Dutch Indies 1,539,000 tons, Sarawak 65,000 tons, Egypt 103,000 tons, Russia 1,526,000 tons, Roumania 466,000 tons, United States 786,000 tons, and Mexico 301,000 tons, a total of 4,786,000 tons.

The Anglo-Saxon Petroleum Co.—The following information of the progress of the Company at Miri is from the Anglo-Saxon Petroleum General Manager's report for 1914:—

The "Anglo-Saxon" staff comprises 30 Europeans, 10 Chinese and other clerks, and 1 Hospital dresser. The total muster roll on December 31st, 1914, was 900, as compared with 764 on December 31st, 1913. Of the six wells drilling on January 1st, 1914, five have since been brought into production. During 1914 sixteen new wells have been begun, and 14 are now producing. The total production of crude oil during the year was 64,510.77 tons (compared with 26,067 tons for the year 1913) and of this 58,328.77 tons have been shipped. The machine shop and a large smith's shop, also a saw-mill, have recently been completed. Additional storage tanks—two of 500 tons and one of 200 tons—have been completed, and a further 4,000 ton tank is in hand.

The most conspicuous achievement during the year was the laying of 10,000 feet of 6 inch pipeline on the sea-bottom to reach a depth of 18 feet at low-water, enabling us to load directly into tank vessels of 2,500 tons capacity, and entirely avoiding the necessity for towing tanker lighters over the bar. The preliminary work involved the making of some 4,000 feet of embankment through swamp land on which to lay runways. The final stage, that of hauling the line out to sea, was undertaken in September by Capt. H. Westers, the "Anglo-Saxon" Marine Superintendent for Singapore. The first vessel to load from the sealine was the M. V. Vulcanus, on September 12.

High Rate on Gasoline.—The Philippine Board of Public Utilities Commissioners, in a case just decided between the Standard Oil Co. and the Philippine Railway Co., has decided that the railroad is justified in charging a higher freight rate on gasoline than on petroleum. The Standard Oil Co. brought a complaint to the board based upon a charge of $0.119 per case for gasoline between Cebu and Carcar as against a charge of $0.0388 for petroleum.

COMPANIES

Profits of Japanese Companies.—In order to have the knowledge of the general situation of business carried on by our companies, says the *Japan Financial and Economic Monthly*, it is necessary to see what is the average profit of the business and how it is allotted to the dividend, redemption fund, reserve fund, the amount transferred to the succeeding term, bonus, etc. Before dealing with the result of our investigation we must state that we have taken up exclusively joint stock companies engaged in all forms of business except insurance and banking. First, because reports of all the forms of companies other than joint stock companies are not announced and, second, because the same method of investigation can not be applied to insurance and banking which are different from other kinds of business. Regarding the business terms, one year is a business term with some companies, while with most of our companies half a year is one term of business. For convenience in the way of our investigation we presupposed that every company has two business terms a year and included all the accounts settled from March to the end of August in the settled accounts for the first half of the year, and all the accounts settled from September to the end of February in the settled accounts for the second half of the year. As to the way of the calculation of the profit we have employed the method of subtracting the total outlay minus various forms of reserve funds, various redemption funds, bonus and dividend from the total income. Regarding the number of companies, we have chosen more than four scores of companies throughout the entire land. Below we append the accounts of profits from the first half of 1910 to the first half of 1914, except the two years of 1911 and 1912.

From the above table we can point out four principal features of the business of our companies. Firstly the profit is yearly increasing on the whole. As an illustration of this the average of the profit of a company which was from 300,000 to over 450,000 *yen* in 1910 and 1911 increased to a matter of 500,000 *yen* in 1912. The first half of last year witnessed the business depression owing to the inactivity of the financial world. Still the profit exceeded 500,000 *yen*. Though materials for the calculation of the profit for the second half of the year have not as yet been available the profit was probably smaller than 500,000 *yen*. But it was not apparently below a matter of 300,000 *yen*. At any rate the average of the annual profit of a company has come to reach over 1,000,000 *yen*. This may be partly due to the fact that the companies we have chosen are all of a comparatively large scale. But it must chiefly speak of the result of the progress of the business of companies in general. The British magazine "Economist" has continued a long time since to put on record the result of investigation of this sort. According to the statement of accounts for a year ending last June which appeared in this magazine the average profit of over 900 companies is put at about 800,000 *yen*. The average of the profit of the Japanese companies of the similar number will certainly show a far smaller proportion. At any rate, there is no doubt that the business of our companies is by degrees assuming a great dimension. In the second place, the profit has not been increasing in proportion to the increase of the capital invested. As an illustration of this, the average profit of a company for the first half of 1910 which stood at 384,000 *yen* increased to 507,000 *yen* in the first half of last year. In spite of such a great increase in the profit the proportion of the profit to the paid up capital remained unchanged, showing 8 3/5 per cent., that is 17 1/5 per cent. per annum. Thirdly the proportion of the profit to the paid up capital well speaks of the state of the financial world. The proportion which dropped off to 8 3/5 per cent in 1910 (first half of the year) increased to 9 3/10 per cent in 1911. It again declined later. But since the first half of 1912 it began to increase, reaching 9 9/10 per cent in the first half of 1913. In the first half of 1914, it again dropped off to 8 3/5 per cent. as stated above. This rise and fall of the proportion can well be said to be barometric telling the state of the financial world. Lastly the proportion of the profit to the paid up capital, though not steady, is very high on the whole. According to the same investigation of the "Economist" referred to above the proportion of the profit of British Companies to the paid up capital is put at 11½ per cent. per annum, whereas the proportion of Japanese companies is from 6 4/5 to 9 9/10 per cent. for the half year term, that is from 3 3/5 to 17 1/5 per cent. per annum. With a great financial depression for the first half of the year, last year witnessed the proportion reaching as much as 17 1/5 per cent. The situation amply speaks of the fact that the business of our companies is destined to more and more develope. The result of the investigation classified according to forms of business are tabulated as follows:—

	1910		1913		1914
	1st Half	Last Half	1st Half	Last Half	1st Half
No. of Companies	66	65	73	72	75
Capital (*yen*)	284,930,194	290,971,784	382,775,257	401,518,027	441,215,159
Profit (*yen*)	25,393,646	20,714,633	37,962,870	39,077,996	38,079,296
Rate of Profit	86%	68%	99%	94%	86%
Average Profit of a Company (*yen*)	384,752	318,687	520,039	542,750	507,724

		1910		1913		1914
		1st Half	Last Half	1st Half	Last Half	1st Half
Spinning	No. of Cos.	10	10	10	10	10
	Capital (*yen*).	32,078,125	32,206,219	38,045,065	48,301,480	42,231,630
	Profit (*yen*).	3,508,227	3,499,539	7,872,489	9,819,218	7,149,812
	Rate of Profit	10.9%	10.9%	20.7%	20.3%	16.9%
Weaving	"	4	4	4	4	4
	"	5,250,000	4,599,700	7,725,500	7,250,000	7,250,000
	"	251,487	† 178,929	801,317	557,570	† 108,206
	"	4.8%	—	10.4%	7.2%	—
Hemp Manft.	"	1	1	1	1	1
	"	4,800,000	4,800,000	4,800,000	4,800,000	4,800,000
	"	321,677	316,433	433,656	431,590	432,724
	"	6.7%	6.6%	8.9%	9.0%	7.7%
Paper Manft.	"	3	3	2	3	3
	"	12,500,000	13,100,000	6,900,000	13,290,670	14,706,900
	"	371,392	402,573	62,180	1,191,954	1,242,262
	"	3.0%	3.1%	8.9%	9.0%	8.4%
Mining	"	6	6	5	6	6
	"	14,699,992	25,819,864	28,900,000	29,250,000	30,087,500
	"	1,982,508	1,609,922	3,705,216	4,060,898	3,336,908
	"	8.0%	6.2%	12.8%	13.9%	11.1%
Brewery...	"	3	3	3	3	4
	"	11,526,340	11,528,410	12,467,420	12,468,122	12,968,157
	"	740,432	796,128	1,086,559	1,282,492	1,129,106
	"	6.4%	6.9%	8.9%	10.3%	8.7%
Manure	"	3	3	3	2	3
	"	4,775,000	6,458,653	8,450,000	8,937,500	10,016,575
	"	313,657	167,588	740,330	674,429	763,880
	"	6.8%	2.7%	8.8%	7.5%	7.6%
Porcelain and Earthen Wares	"	1	1	4	4	4
	"	720,000	720,000	4,140,000	4,390,000	4,265,000
	"	† 25,394	22,246	409,043	345,341	368,854
	"	—	3.1%	9.9%	7.9%	8.6%
Railway...	"	2	3	2	2	2
	"	9,285,000	11,777,240	6,225,000	6,586,000	6,716,435
	"	374,738	536,470	308,503	323,877	320,960
	"	4.0%	4.6%	5.0%	3.9%	4.8%
Electric Railway...	"	5	5	5	5	5
	"	11,141,195	19,004,122	25,390,717	25,264,555	25,264,900
	"	600,424	692,790	904,192	1,212,973	1,149,554
	"	5.4%	3.6%	4.6%	4.8%	4.9%
Shipbuilding and Machine Manft...	"	7	7	8	8	8
	"	62,762,500	64,788,500	67,619,850	68,270,000	68,450,000
	"	5,874,326	6,144,792	9,498,551	9,611,787	8,688,924
	"	9.4%	9.5%	14.5%	14.1%	12.7%
Electric	"	6	6	6	6	6
	"	37,425,000	39,635,000	74,713,480	85,326,825	97,228,835
	"	2,822,815	2,991,400	4,557,774	4,684,200	4,877,179
	"	7.5%	7.5%	6.1%	5.5%	5 0%
Gas	"	3	3	3	3	3
	"	19,474,750	24,091,850	36,512,500	40,535,150	44,737,500
	"	1,397,574	1,374,691	2,252,293	2,057,513	2,114,040
	"	7.2%	5.7%	6.2%	5.1%	4.7%
Exchange	"	4	4	4	4	4
	"	17,350,000	17,700,000	18,450,000	18,850,000	18,850,000
	"	1,453,789	1,273,947	1,111,746	991,277	993,039
	"	8.4%	7.2%	6.0%	5.1%	5.2%
Warehouse	"	2	2	2	2	1
	"	3,298,000	3,298,000	1,878,000	3,748,000	2,000,000
	"	90,342	57,884	68,925	126,994	115,877
	"	2.7%	1.5%	3.7%	3.4%	5.7%

Sugar Manft	„	5	1	5	2	5
	„	36,769,292	9,067,372	38,543,025	20,018,250	46,425,000
	„	5,211,595	911,877	3,428,278	1,476,994	5,239,429
	„	19.5%	10.1%	08.9%	07.4%	11.0%
Miscellaneous	„	1	3	6	7	6
	„	1,075,000	1,842,500	2,015,000	3,786,475	3,946,252
	„	104,055	86,272	122,809	228,879	264,947
	„	9.7%	4.7%	6.2%	6.0%	6.7%

(† denotes loss.)

Spece does not permit us to dwell at length upon the details of the figures given above, so let us point out a few important points. In the first place, of various forms of business spinning industry shows the greatest profit, ranging between over 20 and 50 per cent per annum. Next comes, shipping shipbuilding and manufacture of machinery. Each of these industries has showed a profit not less than 20 per cent. since 1911. A great profit shown by shipping and shipbuilding is largely due to the fact that most of the companies are either directly or indirectly under the protection of the Government. Mining has also shown a large profit for the last two years. This is chiefly due to an activity in oil and coal industry. Sugar industry shows also a great profit. But this is attributable to the fact that many of the sugar companies settle accounts at the end of the year instead of the half year. If they settle accounts semiannually their profit must be found even less than the average profit of all companies.

MANUFACTURES

Siamese Hat Trade.—A review of Siam's trade in foreign hats and caps during the half decade ended March 31, 1914, shows a steady demand for these articles of clothing for each year, the customs figures giving the following results: $177,269 for 1909-10, $173,921 for 1910-11, $200,054 for 1911-12, $239,320 for 1912-13, and $255,555 for 1913-14. The United Kingdom and dependencies led in these imports with $120,515 worth for 1913-14 (Great Britain, $45,005; Singapore, $50,221; Hongkong, $22,251; other, $3,038); and during the same period Italy supplied $64,201 worth; Japan, $34,584; Germany, $14,959; China, $9,612; and France, $7,991.

The share of the United States remains as yet insignificant, amounting to $542 for 1913 and $27 for 1913-14. The import duty is 3 per cent ad valorem.

Explosives in India.—Practically all the commercial explosives used in India come from Glasgow, Scotland. The use of explosives for preparing the soil for agricultural purposes is very little practiced as yet, but a fair amount are used in connection with mining and railway and irrigation construction works. The Department of Commercial Intelligence of the India Government has furnished the following statistics as to the quantity of explosives imported by sea into British India for the year 1913-14 in hundredweights of 112 pounds, values in U. S. currency. Blasting fuse 3,155, $60,025; Blasting gelatine 6,060, $202,350; Dynamite 3,624. $105,763; Gelatine dynamite 1,581, $46,510; Others 3,772, $110,380.

Oilcloth in Siam.—While the demand for oilcloth, floor cloth, etc., in Siam has been fairly steady for the last half decade, with the exception of 1910—11, imports at Bangkok during the fiscal year 1913—14 were less than in 1909—10, but exceeded the average for the five-year period by more than $3,000. The total imports of these floor coverings in 1913—14 were valued at $41,379. Hitherto the main sources of supply have been the United Kingdom and dependencies, Germany, and Belgium, which countries furnished $36,282, $889, and $1,790 worth, respectively, in the fiscal year ended March 31, 1914. The share of United States was $470 for 1913 and $2,226 for 1914.

Japanese Iron Market.—The iron market has long been in a depressed condition owing to the decrease in demand. But inasmuch as the stock in Tokyo and Yokohama has now diminished in quantity, there being scarcely over 2,000 tons in Tokyo and 1,000 tons in Yokohama, the dealers have had to raise the price. The strong tone in the original market is another reason for the slow but steady improvement of the market here, and especially is this tendency marked in galvanized-iron sheets, the quotation of which has, according to a latest foreign dispatch, risen by 1 shilling (24.3 cents). The growing demand in the home market as witnessed at present is, however, not for the immediate consumption, but because the retailers have come to purchase speculatively in anticipation of the scarcity of stock in the not far-distant future.

The present quotations for iron bars are: $2.14 per 100 pounds of round ¾-inch bars, $1.99 for ⅞-inch bars, $1.83 for ¾-inch square bars, and $1.80 for ⅞-inch square bars. As to the galvanized-iron sheets, the quotations range between $0.53, and $0.52, according to quality. The iron nails are also increasing in demand, the present quotations being 9.30 yen per cask of 100 kin of ¾-inch ($3.49 per 100 pounds) homemade nails, and 9.40 yen ($3.52 per 100 pounds) for ⅞-inch nails, with every prospect of a further advance in future.

It is also reported that the Kamaichi and Edamitsu iron foundries are having a very busy time in the execution of orders from the Russian Government for the supply of various kinds of iron goods. It is generally believed that the great boom in the metal-goods market immediately following the outbreak of war, which had been rather abnormal, resulted in a reactionary depression toward the end of last year, but that the market should steadily improve hereafter.

Ham Factory at Dairen.—A Japanese resident in Dairen has been experimenting upon the manufacture of ham for a few years and often this industry, and recently paid a round of visits to the hog farms and ham factories at Tokyo, Yokohama, Kamakura, Osaka, Kobe, Kyoto, etc. The outputs of his experimental manufacture are being put on the market.

The total consumption of ham ranges from Y20,000 to Y30,000, of which the Yamato Hotel alone buys about Y5,000 worth Hitherto 80 per cent. of the purchases of the Hotel has been imported from England and the remainder direct from Kamakura, Japan.

New Meat Works.—The works proposed to be erected on Brisbane River by the Morris Beef Co. (Ltd.), on 420 acres recently purchased, will make six meat works and one bacon factory within a radius of a couple of miles, and all within 4 or 5 miles of the city of Brisbane. The companies are the largest in Australia, including the Australian Meat Export Co. (Swift's); Borthwick's, Queensland Meat Export Co.; Birt & Co.; and Queensport Works.

Big Lumber Contract.—The Kolambugan Lumber company, of which Findlay, Richardson and company are proprietors, has been awarded the P100,000 contract to furnish the army in the Philippines with 2,430,495 board feet of lumber, to come from the white lauan and almon forests of Mindanao. The award is regarded with great satisfaction by the lumber men of the Philippines as it is the first time Philippine woods have ousted Oregon pine in a large army contract.

TELEPHONES, TELEGRAPHS, ETC.

Hankow Telephone Concession:—The Chinese Telegraph Administration wish to extend their telephone service operating in the City and to Hanyang and Wuchang into the Concession. Meanwhile it is recorded the Russian Municipality are endeavouring to form a Municipal Telephone service. Enquiries are to be made regarding what progress if any has been made by the Russian Municipality, and the China Telegraph Administration is to be invited to give the fullest details of their proposed scheme.

PUBLIC WORKS

Naguilian Mountain Road.—The Philippine Commission, which has charge of appropriations for the Mountain Province, has voted $30,000 for continuing construction work on the Naguilian Road, the highway that is to take the place of the old Benguet Road between Baguio and the Mountain Province. The present rainy season has done considerable additional damage to the Benguet Road, and as it is not the policy of the Government to keep the latter open after the Naguilian Road is opened for traffic, it is proposed to hasten work on the latter. Construction of this highway is progressing rapidly.

Chihli Naval Base.—The Chiang Chun of Fengtien has despatched a petition asking the Government to raise money for the construction of roads and buildings and harbour in the Lien Hua Island which is situated in Ching-hsien, so that it can be early opened to foreign trade. A carefully-drawn map of the island is attached to his petition. We learn that the Minister of Navy desires to make the island a naval base in view of the fact that no suitable location for the harbouring of warships in the North has been found. A telegram has been sent to the Chiang Chun expressing the desire of the Admiralty to convert the island into a naval base. Naval officials will be appointed immediately to proceed there for inspection, and if their report is favourable, the construction of the harbour in the Lien Hua Island will soon begin.

Manila, Garbage Expert.—It is proposed by the city of Manila to bring a garbage expert from the United States to look after the disposition of the city's refuse. A local company has built an extensive plant and installed machinery to handle the city's garbage and to utilize it for manufacturing purposes so far as possible. Some time ago this company obtained a contract from the city for handling the garbage but was unable to do the work satisfactorily owing to some deficiency in equipment or management. The city subsequently canceled cancelled the contract and continued to handle its own garbage. It is now proposed to bring over an expert in handling garbage and, if deemed advisable, purchase the plant of the local company. Heretofore garbage has been used largely for filling in outlying low areas, but now the question of the city's health has become involved in the disposition of the garbage.

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Shewan, Tomes and Co.

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Brake Adjusters (Automatic)
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Bridge Materials
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Chimneys
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Germinal Cigar Factory
Olsen & Co., Walter E.

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Coal Mining Co.'s
Kailan Mining Administration
Peking Syndicate, Ltd.
South Manchuria Railway Co.

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Condensing Plants
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Shewan Tomes & Co.
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Siemens China Co.
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Frank L. Strong
Shanghai Dock & Engineering Co. Ltd.
White & Co. Inc., J. G.

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Austin Drainage Excavator Co.

Consulting Engineers
White & Co., Inc. J. G.
G. M. Gest

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Werf Gusto

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Westinghouse E. & M. Co.

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Lidgerwood Mfg. Co.

Drawing Instruments
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Dredgers
Middleton & Co., Ltd.
Priestman Bros. Ltd.
Shanghai Dock & Engineering Co., Ltd.
Werf Gusto.

Drop Steel Forging and Stampings
Anger Mfg. & Supply Co.

Dry Batteries
Andersen Meyer and Co.

Drydocks
Shanghai Dock and Engineering Co.
Taikoo Dock & Engineering Co.
Hongkong and Whampoa Dock Co.
Mitsu Bishi Dockyards & Eng. Wks.

Dyeing Plants
Mather & Platt, Ltd.

Economisers
Babcock & Wilcox Ltd.

Educational
International Correspondence Schools

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General Electric Co.
Lidgerwood Mfg. Co.

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Andersen Meyer & Co.
Arnhold, Karberg & Co.
Dick, Kerr & Co., Ltd.
Westinghouse E. & M. Co.
Fearon, Daniel & Co.
General Electric Co.
Siemens China Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
Shewan, Tomes & Co.
Frank L. Strong Machinery Co.
U. S. Steel Products Co.
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Andersen, Meyer & Co.
Arnhold, Karberg & Co.
Jardine, Matheson & Co.
Babcock & Wilcox
Fearon, Daniel & Co.
General Electric Co.
Mather & Platt, Ltd.
Shewan, Tomes & Co.
Siemens China Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
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Priestman Bros. Ltd.
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Rendrock Powder Co.

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Kailan Mining Administration

Fire Engine
Dick, Kerr & Co., Ltd.

Fire Prevention Apparatus
Mather & Platt, Ltd.

Filament Lamps
Dick, Kerr & Co., Ltd.
Frank L. Strong
Siemens China Co.
Westinghouse E. & M. Co.

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Jones & Lamson Mchy. Co.

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Forwarding Agents
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Fuses and Fuse Blocks
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Worthington Pump Co., Ltd.

Gasoline Lighting Plants
Andersen, Meyer & Co.

Gas Producer Plants
Westinghouse E. & M. Co.

Gears and Pinions
Anger Mfg. & Supply Co., Ltd.

Graphite Paint
J. Dampney & Co.

High Speed Engines
Drysdale & Co.

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Lidgerwood Mfg. Co.

Horse Shoes
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Hose
Geo. Angus & Co.
Interlock Metal Hose Co.
F. Reddway & Co., Fire Hose "Sphincter Grip," Armoured Hose, etc.

Hotels
South Manchuria Railway.
Chosen Railways

Ice Machinery
Vilter Mfg. Co.
Vulcan Iron Works

Insulating Material
Micanite & Insulators Co., Ltd.

Insurance
Stevenson & Co., Ltd., W. F.

Ironfounders
A. F. Craig & Co.

Job Printers
Commercial Press

Journal Boxes
T. H. Symington Co.

Knitting Machines
Shewan, Tomes and Co.

Lanterns and Lamps
Andersen, Meyer and Co.

Locks
Joseph Kaye & Sons, Ltd.
Shewan, Tomes & Co.

Locomotive Speed Indicator and Recorder
Hasler Telegraph Works.

Locomotive Headlights
Pyle-National Electric Co.

Logging Machinery
Lidgerwood Mfg. Co.

Lubricants
Albany Lubricating Co.
Standard Oil Co.
W. H. Anderson & Co.

Lumber Dealers
Robert Dollar Co.
Jardine, Matheson & Co.
Norton Harrison Co.
Shewan, Tomes & Co.

Machinery Merchants
Andersen, Meyer & Co.
Arnhold, Karberg & Co.
Shanghai Machine Co.
Fearon, Daniel & Co.
Frank L. Strong
Schuchardt & Schutte.
Shanghai Dock & Engineering Co., Ltd.

Machine Tools
American Tool Works Co.
Jones & Lamson Mchy. Co.
Schuchardt and Schutte.

Marine Engines
Fairbanks, Morse & Co.
W. F. Stevenson & Co., Ltd.

Manganese Steel
Edgar Allen & Co.
Bohler Bros. & Co., Ltd.

Manila Rope
Johnson, Pickett Rope Co.
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Westinghouse E. & M. Co.

Meat Products
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F. Reddaway & Co.

Mill Machinery
Shanghai Dock & Engineering Co., Ltd.
A. F. Craig & Co., Ltd.

Mine Locomotives
General Electric Co.

Mine Prospecting and Development
Peking Syndicate, Ltd.

Mineral Oil Plants & Machinery
A. F. Craig & Co.

Mining Machinery
Melchers & Co.
Shanghai Dock & Engineering Co., Ltd.
Shewan, Tomes & Co.
Gould's Manufacturing Co.

Motor Omnibus
Hurst Nelson and Co., Ltd.

Motors
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Motor Launches
Shanghai Dock & Engineering Co., Ltd.

Motor Spirits
Standard Oil Co.

Motor Tyres
F. Reddaway & Co.

Motor Vehicles
Commercial Car Co.

Oil Break Switches
General Electric Co.
Westinghouse E. & M. Co.

Oiled Cloths and Papers
Micanite and Insulators Co., Ltd.

Oil Engines
Fairbanks, Morse & Co.

Oil Mill Machinery
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Oil Separators
Worthington Pump Co., Ltd.

Ozone Machines
Siemens China Co.

Packings
F. Reddaway & Co.

Paints, Oils and Varnish
Standard Oil Co.
Albany Lubricating Co.

Photo-Engravers
Commercial Press

Piling (Sheet Steel)
U. S. Steel Products Co.

Platform Scales
W. & T. Avery, Ltd.

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Shewan, Tomes Co.

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General Electric Co.
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Joseph Evans & Sons
Mather & Platt, Ltd.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
Shewan, Tomes & Co.
The Goulds Manufacturing Co.
Worthington Pump Co.

Pulverizing Mills
Lehigh Car, Wheel and Axle Wks.

Radial Drills
American Tool Works Co.

Railroads
Chinese Government Railways
Chosen (Korea) Railways.
South Manchuria
Southern Pacific Co.

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Arnhold, Karberg & Co.
Baldwin Locomotive Works.
Robert Dollar Co.
Dick, Kerr & Co., Ltd.
Fearon, Daniel & Co.
Hurst, Nelson & Co., Ltd.
Jardine, Matheson & Co., Ltd.
Lima Locomotive Works.
McConway & Tooley Co.
Pyle-National Electric Co.
T. H. Symington Co.
Shewan, Tomes & Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.
Railway Signal Co., Ltd., The

Railway Signals
Railway Signal Co.

Refrigerating Machinery
Anderson, Meyer & Co.
Vilter Mfg. Co.
Vulcan Iron Works.

Reinforced Concrete Construction
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.

Rheostats
General Electric Co.

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Roofing Materials
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Rotary Dryers
Lehigh Car, Wheel and Axle Wks.

Safes
W. H. Anderson & Co.
Mustard & Co.
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Saw Mill Machinery
Andersen, Meyer and Co.

Scales
W. & T. Avery, Ltd.

Sewer Pipe & Tile
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Sheet Steel
U. S. Steel Products Co.

Shipping Agents
Cia. General de Tabacos
Shewan, Tomes & Co.
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Shipbuilding and Repairs
Fiat-san Giorgio Ltd.
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Hongkong & Whampoa Dock Co., Ltd.
Mitsu Bishi Dock and Engineering Works
Shanghai Dock and Engineering Co., Ltd.
The Taikoo Dockyard and Engineering Company of Hongkong, Limited

Ship-Chandlery
Ynchausti & Co.

Steamship Companies
Cia. Transatlantica.
Robert Dollar Company.
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Ynchausti & Co.
Toyo Kisen Kaisha.

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Lidgerwood Mfg. Co.

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United States Steel Products Export Co.

Steel Works
Bohler Bros. & Co., Ltd.
U. S. Steel Products Co.

Stokers
Babcock & Wilcox Ltd.

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Simmons Mfg. Co.

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Bohler Bros. & Co.
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U. S. Steel Products Co.

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A. F. Craig & Co.

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Anderson, Meyer & Co.
Kellogg Switchboard & Supply Co.
The Western Electric Co.
Westinghouse E. & M. Co.

Textile Machinery
A. F. Craig & Co.

Tiles and Bricks
Green Island Cement Co., Ltd.
Kailan Mining Administration.

Tin Plates
U. S. Steel Products Co.

Tobacco Dealers
British-American Tobacco Co., Ltd.
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American Tool Works Co.
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Tool Steel
Bohler Bros. & Co. Ltd.
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Towers Cooling
Worthington Pump Co., Ltd.

Tramcars
Hurst, Nelson & Co. Ltd.

Tramway Equipment
Dick Kerr & Co. Ltd.
Westinghouse E. & M. Co.

Tramway Supplies and Specialties
Anger Mfg. & Supply Co., Ltd.

Tramway Tyres
Anger Mfg. & Supply Co., Ltd.

Trucks
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Tube Mills
Edgar Allen & Co.

Tungsten Steel
Bohler Bros. & Co., Ltd.

Turbine Pumps
Worthington Pump Co., Ltd.

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Westinghouse E. & M. Co.

Turret Lathes
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Worthington Pump Co.

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American Tool Works Co.
Defiance Machine Works
Shanghai Dock & Engineering Co., Ltd.

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Trimont Mfg. Co.

THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XI. SHANGHAI, MAY, 1915 No. 12

THE BROW-BEATING OF CHINA

A Critical Exposition of Japan's Dictatorial Trespass upon the Sovereignty of China and Cynical Disregard of the Rights of Other Powers in her Effort to Gain Political and Economic Predominance in the Far East.

The negotiations at Peking in regard to the series of articles relating to Shantung, South Manchuria, Eastern Inner Mongolia and Fukien in particular, and to China in general, to which Japan, in January last, demanded that the Chinese Government should assent, resulted in the conclusion, on May 25, of a new treaty between the countries concerned. This result was not achieved before Japan had forced matters to a crisis by issuing an Ultimatum to China. The peace of the Far East hung for a time in the balance, but the eminent good-sense, patience under provocation, and forbearance of the Chinese Government saved the situation, and the world was spared the spectacle of a strong nation subjecting a weak neighbour to the ordeal of fire and sword, because the latter refused to agree to demands that the former denied having presented. That any nation should menace war on such grounds may sound incredible, but a careful study of the Ultimatum presented by Japan to China, and of the communique (which are published in this issue) in which the Japanese Government sought to justify their action, shows that a virtual agreement had been reached on all the demands of which the Powers had been informed. The Ultimatum was apparently issued to compel China to agree to consider, at some future date, demands which Count Okuma assured the interested Powers had not been presented. It is doubtful whether the history of the modern world can supply another instance of a nation announcing its readiness to shed the blood of its people, and to inflict upon an unoffending neighbour the horror and misery of war, in support of such a cause.

It is but fair to Japan, however, to acknowledge that the reason for the Ultimotum might be differently stated. The Japrnese communique affirms that the twenty-one demands were presented to China to adjust matters to meet the new situation created by the war between Japan and Germany and to bring closer the friendly relations subsisting between Japan and China. As China, before the ultimatum was presented, had agreed in principle to all the demands relating to Shantung, it may be said that the adjustment that Japan desired was secured. The singular conclusion is then reached that Japan threatened the Chinese nation with war in order "to bring closer the friendly relations subsisting between Japan and China." The matter is too serious to be treated lightly, but China would certainly be justified in quoting Bickerstaff:—

> Perhaps it was right to dissemble your love
> But—why did you kick me downstairs?

The history of the negotiations has been given in detail in previous issues of the FAR EASTERN REVIEW, and in the April number the record was carried up to the conference of April 17. It will be remembered that the feature of the conference on that date and those immediately preceding it, was the evident reluctance of the Japanese Minister to allow finality to be reached in regard to the group of demands relating to South Manchuria. The Chinese Government had made concession after concession in the hope that some satisfactory agreement in this connection might be reached, but the Japanese Minister professed his inability to give a definite reply to the Chinese overtures owing to the absence of definite instructions from Tokyo.

No conference was held between April 17 and April 29. The Japanese Government were considering the next step to be taken. There were rumours that drastic action might be expected. It was generally believed, however, that the Japanese Government was awaiting the reply of Sir Edward Grey to questions of which notice had been given by many members of the House of Commons who had awakened to the fact that British interests would be seriously jeopardised if Japan succeeded in compelling China to concede to her demands. It is true that there seemed little ground for the hope that Japan would show any deference to British views, as the original demands included two that directly conflicted with the interests of Great Britain, and it was significant that throughout the Japanese Government ignored the fact that the British had taken any part in the capture of Kiaochou and consequent expulsion of the Germans. Still, there was a lingering hope that the Japanese Government would realize, even at the eleventh hour, that it would be distinctly unwise to estrange British and American good-will. If the officially inspired Kokusai News Agency of Tokyo had not been so entirely discredited by the issue of false information, this hope would have been strengthened by the publication on April 23 of a Kokusai telegram giving what was intended to be taken as an official Japanese explanation of the delay in renewing the negotiations. This message stated that the delay was due to a decision on the part of the Japanese Government to change and modify some of the demands, "none of which was, at any time, irreducible." The claim for railways in South China was to be abandoned to avoid a clash of interests, and other modifications were to be proposed "to enable negotiations to proceed in consonance with the dignity of the authorities in Peking."

This message was obviously issued to create the impression that the Japanese Government were anxious to avoid pressing China to accept any demands that trenched upon her sovereignty, or that conflicted with the principle of equal opportunity, and it suggested that modified demands would be presented in which these objectionable features would not appear. On April 26 the revised demands were presented. The

Japanese Minister at Peking explained that this was the final proposal that the Japanese Government intended to make, and asked that the Chinese Government would accord their acceptance without delay. He also stated that, if China accepted the revised demands without modification, the Japanese Government would restore the leased territory of Kiaochou at an opportune time in the future and under proper conditions. Elsewhere is published the text of these revised demands. They were twenty-four in all. In any true sense of the word there was very little modification. China was asked to forego her sovereign rights in regard to South Manchuria, Eastern Inner Mongolia and Fukien; to acknowledge Japan's special interests in Shantung; to agree to leave the Hanyehping Company under the virtual control of the Japanese, and to agree to the construction by Japan of the South China railways if Japan could come to an understanding with the other Power interested. The demands in regard to Eastern Inner Mongolia appeared as four separate articles.

Naturally, after having been informed indirectly that the demands were to be shorn of their objectionable features, the Chinese Government were amazed when they found that little, if anything, of the kind had been done. They were also surprised that their supplementary proposal in reference to the retrocession of Kiaochou had been ignored in framing the revised articles. Notwithstanding their disappointment, the Chinese Government in their reply presented on May 1 (which is published elsewhere in this issue) agreed to practically everything that the Japanese Government asked. They did not, however, signify their approval to one demand in regard to Eastern Inner Mongolia, nor to the proposal that Japan should be given the right to construct the South China railways. China, moreover, sought to secure Japan's assent to including China's original supplementary proposal in regard to the retrocession of Kiaochou in the group of demands in reference to Shantung, and also asked for the indemnification of the losses caused to Chinese citizens by Japan's military operation, and the restoration of the *status quo ante bellum* in Shantung.

That the attitude taken up by China was eminently reasonable and conciliatory will be admitted, but immediately upon receiving the reply the Japanese Minister withdrew the conditional offer in reference to the restoration of Kiaochou, and informed the Chinese Minister for Foreign Affairs that the Japanese Government would be "disappointed." It was obvious that this meant that Japan was determined upon taking drastic measures. On May 6 the Chinese Government learnt that the Japanese Government had placed an Ultimatum in the hands of their representative in Peking, and they again offered to make further concessions. The overtures were rejected, the Ultimatum was presented, and in due course accepted.

It was expected that the remaining steps would be merely formal; that a Treaty based upon the demands agreed to by China would be prepared and duly signed by the accredited plenipotentiaries. Japanese diplomacy had not, however, reached the end of its resources. On May 15 a conference was held in Peking at which the Japanese Minister, in presenting a draft of the proposed Treaty, intimated that his Government demanded that, instead of being granted an extended lease of Port Arthur and Dalny, the extended lease should be for "the Liaotung Peninsula." He, further, insisted that, in regard to the questions upon which an exchange of notes was agreed, they should be definite when embodied in the Treaty, and also that the Shantung demands should become operative immediately the Treaty was signed. Naturally the Chinese Minister for Foreign Affairs demurred at accepting new demands advanced after the acceptance of the Ultimatum, which could only be deemed to cover all to which China was compelled to agree. No decision was reached in regard to these demands and an informal conference on May 18 had no better result.

The attitude of the United States of America towards the demands had throughout been an object of interested speculation. Several of the demands explicitly conflicted with the Root-Takahira Agreement of November 30, 1908, and it was felt that the American Government would be bound to draw Japan's attention to this fact. There was, however, the difficulty that, while it was unofficially known that the demands contravened the Agreement, emphatic declarations had been made by the Premier of Japan, Count Okuma, to the effect that this was not so. In these circumstances the American Government delayed taking action, but eventually a Note was sent, both to China and Japan, in the following terms:—

> **"In view of the circumstances of the negotiations which have taken place and which are now pending between the Government of China and the Government of Japan and of the agreements which have been reached as a result thereof, the Government of the United States has the honour to notify the Government of the Chinese Republic that it cannot recognize any agreement or undertaking, which have been entered into or which may be entered into between the Governments of China and Japan impairing the Treaty Rights of the United States and its citizens in China, the political or territorial integrity of the Republic of China or the international policy relative to China commonly known as the Open Door policy. An identical note has been transmitted to the Japanese Government."**

The curtain has fallen upon an intensely interesting act in the Far Eastern drama. The two principal players have left the stage and the time for criticism of their performance has come. Discarding metaphor, it will be useful to consider what effect the events of the last four months has had upon the international reputation of the two countries concerned. There can be no disguising the fact that Japan has sunk in the estimation of the world, Her prestige has been lowered by her recourse to intimidation to enforce the acceptance of unjust demands. Her reputation for good-faith and veracity has been besmirched by her deliberate and repeated perversions and suppressions of fact, and by the exhibition of her willingness to violate treaty obligations. Before the demands were presented Japan had a distinct claim upon the gratitude and good-will of the Powers comprising the Triple Entente. She had saved them from the necessity of attending to operations—though certainly of a minor character—that might have diverted attention for a time from matters of greater importance. Inspired by these sentiments her Allies would have given Japan their moral assistance to the fullest degree in any endeavour on her part to secure economic advantages in China that did not conflict with the principle of equal opportunity. But Japan deliberately elected to change the sentiment of gratitude and good-will into that of aversion and suspicion by endeavouring, without the knowledge of her Allies, to alter the *status quo* in the Far East in her own favour; to render the principle of equal opportunity inoperative in large regions in China, and even to secure for herself rights already granted to a country with which she had been in the closest alliance since 1902. That public opinion in Great Britain and America is now entirely out of sympathy with Japan is manifested by utterances in Parliament and the Press.

Apart from the contemptuous disregard for the rights of other Powers in China that Japan has exhibited, in Great Britain and America there has been caused intense disappointment and disgust by the revelation of the fact that Japan was inspired by no sentiment of chivalry in her dealings with a weaker Power. Nothing can be urged in extenuation of the contumelious manner in which Japan throughout treated China. A policy of studied effrontery was inaugurated by presenting the original demands to the President of the Republic in defiance of all diplomatic etiquette; emphasized by the despatch of troops to China while the negotiations were going on, and crowned by the presentation of an Ultimatum in the Japanese language. No excuse can be offered for conduct of this kind, and the conclusion must inevitably be drawn that the Japanese mind is still shackled by feudalism and that the Japanese Government still believes that the weakness of an adversary justifies the arrogant expression of disdain.

China has acquired much that Japan has scornfully thrown away. She has displayed unsuspected qualities of patience and forbearance, and has shown a genuine desire to preserve the rights of other Powers in China. Though menaced by war from without and by civil commotion from within, the Chinese Government, while conciliatory and courteous to a degree, has resolutely resisted the attempt to place China under Japan's suzerainty. Her diplomacy was successful in forcing Japan to admit in her Ultimatum and communique that she had sought

to impair China's sovereignty and to violate her treaty pledges. Moreover, China's diplomacy compelled Japan to show that she was prepared to disregard the repeated declarations that the preservation of the Far East was her first care, and to exhibit a willingness to force an unequal war on China that could only result in immense injury to all foreign interests in the Republic.

There can be little doubt, after a consideration of these facts, which of the players will have the sympathy of the audience when the curtain rises on the next act.

AN ANALYSIS OF THE COMMUNIQUE IN WHICH JAPAN DEFENDED HER ACTION IN ISSUING AN ULTIMATUM TO CHINA

As a fortuitous revelation of the psychology of the Japanese diplomatic mind the communique issued by the Government at Tokyo on May 7 is of the greatest value and importance. It gives an explanation of the motives which animated the Japanese Government in presenting the twenty-one demands to China, and a recital from the Japanese viewpoint, of the course of events which led on May 6 to the presentation by the Japanese Government of an Ultimatum insisting upon an unequivocal acceptance of their demands in the shape in which they had thought it advisable to recast them after three months' negotiation.

The publication of the communique was awaited with the greatest interest, as it was believed that the Japanese Government would avail themselves of the opportunity afforded to refute certain reflections that had been cast upon Japan's international morality, and to justify her actions in the eyes of the world. It was thought that, when the Japanese Government issued an official announcement, they would make it their business to prove (1) that their original denial that twenty-one demands were presented was based on fact; (2) that it was untrue that Japan had sought to take advantage of the preoccupation of the Treaty Powers in the European conflict to press for privileges that infringed China's sovereignty and were inconsistent with the principle of equal opportunity; (3) that it was untrue that Japan had demanded railway privileges in the Yangtsze region that affected detrimentally rights already given to British interests; (4) that it was untrue that Japan had endeavoured to alter materially the *status quo* in the Far East—the maintenance of which had been guaranteed by Japan in the Anglo-Japanese Alliance and other diplomatic instruments—by extending Japan's political power over China to an extent that practically placed the Republic under Japanese tutelage.

There were other points upon which it was anticipated the Japanese Government would throw light; for example it seemed certain that Japan would make it clear that she had treated Great Britain with the frankness called for by the alliance, instead of keeping her in the dark as had been alleged, and also that she would expose the falsity of the statement that she had ignored the fact that Kiaochou was reduced with the co-operation of British military forces. Japan would, it was expected, embrace the opportunity to demonstrate the truth of the assurances given in August, 1914, by the Premier of Japan, Count Okuma, that Japan had no ulterior motive in engaging in war with Germany, and had no desire other than to act up to her treaty obligations and secure peace for the Far East.

This is a brief summary of some of the principal matters in regard to which the well-wishers of Japan confidently expected she would be able to show that she had acted, in the words of Count Okuma, "with a clear conscience, in conformity with justice." Was that belief well founded? The communique speaks for itself, but an analysis may assist in a clearer understanding of Japan's official refutation of the charges that have been brought against her of duplicity, arrogance, bad faith, and general lack of international morality.

It is not too much to say that instead of refuting the charges Japan has cynically admitted that they were all well founded. The pretence is dropped that only eleven demands were presented. But in regard to the notorious Group V, the words "Propositions relating to the solution of pending questions and others" are placed before the seven articles in this Group, clearly with the intention of creating the impression that they were not demands, but merely propositions. In the list of demands presented to the President of the Republic of China, Group V was not preceded by the words quoted above, nor by any phrase indicating that it differed in character from the other Groups or was to be dealt with on a different footing. A striking proof that it was not intended by the Japanese Government that they should be so regarded is found in the fact that the Japanese Minister at Peking at the beginning of the negotiations pressed for the acceptance in principle of *all the twenty-one demands*. Moreover, long before a settlement of the demands in the earlier Groups, the Japanese Minister constantly endeavoured to compel the Chinese delegates to discuss articles in Group V, thus clearly indicating that in the view of his Government the demands in this Group were in exactly the same category as the other fourteen demands. Now it is pretended that these seven demands were only "propositions," evidently because the Japanese Government has realized that the sentiment of the civilized world is against its attempt to force China into a state of vassalage and to compel her to be a party to closing the door of equal opportunity. It must not be forgotten that the Japanese Minister at no stage of the negotiations pressed with less vigour for the acceptance of the articles in Group V now described as "propositions." Their description as such was only decided upon when Japan found it necessary to manufacture some sort of evidence to support her reiterated declarations that the number and scope of the demands presented to China had been grossly exaggerated. The attempt has been a pitiful failure, and has simply demonstrated the readiness of Japanese diplomacy to resort to deliberate misrepresentation in order to prevent the detection of the falsity of previous statements. It has also revealed the incapacity of Japanese diplomacy to realize that the denial of obvious facts and the suppression or perversion of the truth tend to create in the mind of the Westerner a belief that Japan's morality and mentality are still only half developed. It is an established sociological truth that races in a rudimentary stage of civilization, or children, rely instinctively upon a falsification of fact to escape punishment or to achieve their objects. The highly civilized races recognise that falsehood is on the higher ground morally indefensible, and on the lower materially inefficacious. Recourse to deceit that does not deceive is, therefore, merely an indication of immaturity of mind. The adoption by Japan of diplomatic methods that would require for their success child-like credulity on the part of other nations, confirms the belief of those who were of opinion that, while the mentality of the Japanese has developed remarkably in some respects, in others there has been no development at all and that it remains precisely as it was before Japan began to adopt the material features of Western civilization. This would explain the fact that, in the communique under review, Japan frequently assumes that those for whose conversion to her point of view it was issued will jettison their own knowledge and unhesitatingly accept Japan's declarations that what is known to be true is false.

The communique states that the Japanese Government, in formulating the demands, "have taken especial care to avoid those which might have been deemed to conflict with the principles of territorial integrity, equal opportunity and the open door, which Japan has from time to time declared to the Powers in regard to China." The communique later on gives among the demands originally presented to China the following:—

(1) Japan's consent must be obtained in advance when China proposes to grant a railway concession (in South Manchuria or Eastern Inner Mongolia) to subjects of any third Power.

(2) Japan's consent must be obtained in advance when China proposes to procure a supply of capital from a third Power for the construction of a railway (in South Manchuria or Eastern Inner Mongolia) or to raise a loan from such Power on the security of duties and taxes.

(3) Relating to the Hanyehping Company the Chinese Government shall engage not to permit without the

consent of the Company (which is to be under joint Japanese and Chinese management) any one other than the Company to work mines situated in the neighbourhood of those belonging to the Company, and also to obtain previous consent in case it is proposed to take measures which may be deemed to affect the Company directly or indirectly.

(4) China must obtain from Japan a supply of a certain quantity of arms or else must establish arsenals in China under joint Japanese and Chinese management and these must be supplied with experts and material from Japan.

(5) Japan must be consulted whenever foreign capital is needed (in Fukien) in connection with railways, mines and harbour works, including dockyards.

Thus, in her own communique, Japan sets out no less than five demands that beyond all question conflict with the principle of equal opportunity. These are not "gross exaggerations" spread by persons inimical to Japan or by subservient Peking correspondents under the mysterious domination or influence of a certain belligerent. They were thus described when, in spite of Japan's efforts to prevent the scope and character of the demands becoming known, anxiety began to be aroused in Great Britain and America. That pretence has now been abandoned, and Japan boldly admits that these demands were presented, but declares that the Japanese Government "have taken special care to avoid those (demands) which might be deemed to conflict with the principles of territorial integrity, equal opportunity and the open door." It is not simply the case that the five demands mentioned above "might be deemed" to conflict with the principle of equal opportunity; they do so conflict. Yet the Japanese Government are sufficiently ingenuous to think that their statement will convince the Treaty Powers that scrupulous care has been taken to avoid injuring their interests, or, again to quote the words of the Japanese Premier, to deprive China "or other peoples of anything which they now possess."

Do the five demands under immediate discussion restrict opportunity in certain phases of activity in China to Japanese subjects? If they do not Japan has acted with an honourable regard for the pledges given by her in the Open Door Declaration, the Anglo-Japanese Alliance, the Root-Takahira Agreement, and undertakings entered into with France and Russia. If they do, Japan has broken her solemnly pledged word, and has evidently done so deliberately in the belief that the Treaty Powers are too preoccupied elsewhere to call her to account. We have already emphatically stated that we consider that these five demands conflict with the principle of equal opportunity and we will now show that no other view is possible.

Before the acceptance by China of the demands relating to South Manchuria, any of the Treaty Powers had the right equally with Japan to obtain a railway concession in this region, to lend money for the construction of railways in South Manchuria, or to lend China money for any purpose on the security of duties or taxes levied in that part of the Republic. None of these things can be done under the new conditions unless the consent of the Japanese Government be obtained in advance. No amount of specious sophistry can disguise the fact that the "opportunities" that existed before the acceptance of the demands have thus been denied to every Power except Japan.

Let us put the matter more concretely. If Italy, or any other Treaty Power, were to apply for a railway concession in Shensi, for example, she could obtain it if China's consent were secured. And so could Japan. But in South Manchuria Italy or any other Power, could *not* obtain a railway concession, or lend money for railway construction or for any other purpose, unless Japan consented. Every Power other than Japan is compelled, before engaging in certain activities in South Manchuria, to obtain the consent of China *and Japan*. Japan is able to engage in these activities if she obtains the consent of China. It is obvious, therefore, that equal opportunity in these respects does not exist as far as South Manchuria is concerned.

Turning to the demand in reference to the Hanyehping Company, it is to be noted that Japan in her revised demands abandoned the preposterous claim to a monopoly of mining rights in the Yangtsze Valley. But it must not be forgotten that in her communication to the Treaty Powers *Japan deliberately withheld the fact that she was pressing for such a monopoly*, and caused it to be understood that she was only asking for an agreement that the Hanyehping Company should be placed under Japanese and Chinese co-operation at an opportune moment in the future. This is a most glaring instance of Japan's settled policy of misrepresentation—not to use a harsher term. She caused it to be understood that the allegation that she was seeking to obtain exclusive mining and other rights in the Yangtsze Valley was a malicious mis-statement. Yet in her official communique she admits that such a demand was made! Let us repeat the demand in the terms of the Japanese official communique:—

> "(In relation to the Hanyehping Company) the Chinese Government shall engage not to permit, without the consent of the Company, any one other than the Company to work mines situated in the neighbourhood of those belonging to the Company, and also to obtain previous consent in case it is proposed to take measures which may be deemed to affect the Company directly or indirectly."

It might appear to those unacquainted with Japanese methods that this demand could not fairly be construed as an endeavour to obtain a monopoly for Japan of mining privileges in the Yangtsze Valley, nor as an attempt to deny to other Powers equal opportunity. But anticipation of future events can only be based upon past experience. If it can be shown that in previous analogous circumstances certain effects have attended upon certain causes, it is fair to assume that what has happened in the past will happen in the future. In this instance the Japanese Government demands that there should be Japanese and Chinese co-operation in the management of the Hanyehping Company, priority being significantly given to "Japanese." A similar proposal was made in regard to the South Manchuria Railway after the Russo-Japanese War. An indication was then given of the Japanese interpretation of the word "co-operation." The Japanese authorities proposed that half of the capital of the railway should be held by the Japanese Government and that the other half should be subscribed by Japanese and Chinese. The head office of the Company was to be at Tokyo and the *control* was to be vested in Japan. We believe that we are right in saying that no single share was taken up by the Chinese, as beyond providing a portion of the capital the Chinese were not to be permitted to have any effective voice in the administration of the Company. The Yalu Timber Company was another case in which Chinese and Japanese were to "co-operate" for their mutual advantage. The head office was to be in Tokyo and the control of the Company was to be actually, if not ostensibly, in the hands of the Japanese. The result has been that the Chinese shareholders have been "frozen out." The capital of the Kirin-Changchun Railway was jointly subscribed by Japan and China. As a result of Japan's insistance on the acceptance of her demands Japan has secured the control and administration of the railway for ninety-nine years and the Chinese half of the capital is to be transferred to Japan. These facts supply sufficient evidence that "co-operation" between Japanese and Chinese means that the control of the enterprise is vested in the hands of the Japanese, and the assumption is justified that the Japanese element would predominate in the affairs of the Hanyehping Company. The Company, Japan demanded, should be given the power to veto the working of mines in the neighbourhood of those belonging to the Company and to veto *any measures* which might be deemed to affect the Company directly or indirectly. It must be taken as admitted that "co-operation" in the Hanyehping enterprises would involve Japanese control, and as a necessary consequence the Japanese would determine the precise application to be given to the phrase "mines in the neighbourhood of those belonging to the Company," and would also decide if any measure could be deemed "to affect the Company directly or indirectly." The article was clearly drawn up with the object of enabling Japan to veto any mining concession to a third Power in the Yangtsze Valley, and the establishment by a third Power, in co-operation with China or otherwise, of iron and steel works in any part of China. In fact the latter portion of this article seems to render the first portion superfluous, as it gives Japan the right to veto anything in any

portion of China's territory that could be held to affect the Company directly *or indirectly*. This could certainly be construed to mean that Japan could veto the establishment of iron works at Tungkuan in Anhui or, as a matter of fact, in Yunnan or Mongolia, or any other region, and even the operation of coal mines. The power of veto is so comprehensive that it would be within Japan's right to demand the prohibition of the importation of railway iron on the ground that such importation affected the interests of the Company.

The point might be raised that it is extravagant to suppose that Japan would seek to put so comprehensive a construction on the privileges that would be granted her if this article had been accepted, but her attitude in regard to railways in South Manchuria must be recalled. At the conclusion of the Russo-Japanese War Japan compelled China to agree not to grant concessions for the construction of railways parallel to the South Manchuria line. China desired the inclusion in the agreement of a definition, in terms of distance, of the expression "parallel to," but Japan firmly refused. The reason for her refusal was manifested when Anglo-American interests secured a concession to construct a line between Chinchow and Aigun. This line would not, at the nearest point, have been within a hundred miles of the South Manchuria Railway; would have run on the other side of the Liao Valley, and would have afforded transport facilities to districts that were not served by the Japanese line. Yet Japan (in conjunction with Russia) successfully opposed the construction of the line. Thus, there is evidently good reason for supposing that Japan would interpret in the widest possible sense any right given to her to monopolise iron and coal mining and allied industries in China. If China had agreed to Japan's constantly reiterated demand that she should accept all twenty-one demands in principle equal opportunity in these respects would have ceased to exist.

Next on the list comes the demand that China must obtain from Japan a certain quantity of arms. It will be noted that in the Japanese communique there is no reference to the fact that in the original demand "a certain quantity," was accompanied by a suggestion that the quantity should be in excess of fifty per cent. This is another interesting revelation of Japan's indifference to exactitude, even in an official document, if her case can be put in a better light by misrepresentation or the deletion of damaging words or passages. The omission of the words referred to is not of any real consequence, except as a revelation of Japan's methods, as the conflict with the principle of equal opportunity remains the same whatever quantity of arms China was compelled to purchase from Japan. At the present moment all the Powers have an equal opportunity to supply China with one hundred per cent of the arms she requires. Japan deliberately put forward a demand that this equal opportunity should cease. In her own communique Japan confesses that she endeavoured to force China to join her in this impairment of the principle of equal opportunity, yet she expects the Powers to believe that she had taken special care to avoid demands that might have been deemed to conflict with that principle. It is, to say the least, unusual for a defendant to admit his guilt and then claim that the admission proves his innocence.

The fifth demand in the foregoing list relates to Fukien, and therein Japan sought to obtain the right to veto the employment of foreign capital in that province in connection with railways, mines and harbour works, including dockyards. Before the presentation of these demands the Powers had an equal opportunity to provide capital for railways and mines in every province in China, except Shantung, and for harbour works in every coastwise province, again excepting Shantung. If the demand in regard to Fukien had been accepted the Powers would have ceased to have an equal opportunity for the provision of capital for the purposes named, and as it is China has been forced to deny the complete application of the principle of equal opportunity in Fukien. The Treaty Powers, which previously could have provided China with the capital necessary for the building of shipyards, coaling or naval stations or any other military establishments, are now debarred from doing so. This is another illustration of Japan's anxious solicitude to avoid compelling China to accept demands that would impair in any way the principle of equal opportunity!

Preservation of the Status Quo

The introductory portion of the Japanese communique is significantly silent in regard to the maintenance of the *status quo* in the Far East, which Japan had pledged herself to preserve by all peaceful means. Omission of any reference to this one of Japan's undertakings is remarkable, as she has shown that she has nerved herself to discuss without a symptom of self-consciousness, others which she has ignored quite as obviously. The fervent desire of Japan to bring closer the friendly relations subsisting between Japan and China, and thus ensure the permanent peace of the Far East is referred to, and, as we have shown, great stress is laid upon Japan's profound regard for the principles of territorial integrity, equal opportunity and the open door, but the maintenance of the *status quo* does not receive even the tribute of an incidental remark.

In all her agreements in regard to China with other Powers, Japan engaged herself to maintain, by all pacific means, the *status quo* in the Far East. The outbreak of war and the fact that Germany was in possession of a fortified base in territory leased from China, rendered the literal maintenance of the *status quo* impossible. But the spirit of the undertakings to which Japan had subscribed was that there should be no change in the political relations of China with the rest of the world. Although never so expressed in set terms, the Powers long ago recognised that the adoption of the Spheres of Influence policy in China, would not only imperil the independence of that country, but would also provide constant causes of friction between the Powers themselves that might endanger the peace of the Far East. Some of the Powers may, in their hearts, have agreed to the engagement to maintain the *status quo*, in other words not to seek to establish Spheres of Influence in China, with regret, as they considered that their interests would benefit if the country were partitioned. But it was obviously inadvisable frankly to acknowledge the entertainment of views so subversive of international morality, and all the great Powers, therefore, gave their adhesion to the policy that, by maintaining the *status quo*, would preserve the independence of China. When this policy was adopted the only nation that possessed anything resembling an admitted Sphere of Influence in China was Germany, who had exacted from the Manchu Government an engagement that German capitalists should have a preferential right to supply capital for undertakings in Shantung. Such a right was clearly antagonistic to the principle of equal opportunity, but it has to be remembered that at that time Germany had not given her adhesion to that principle, and it was her creation of special interests in Shantung that led to its formal adoption by all the great Powers—including Japan. It is, therefore, futile to claim as a justification of Japan's action that she is merely doing in other regions something that Germany had already done in Shantung. It was because of what Germany had done in Shantung that Japan and the other Powers pledged themselves not to take similar action in the future, but to maintain the *status quo*. Let us turn again to the list of demands as given in the Japanese communique and segregate those that bear upon the maintenance of the *status quo*. The following may fairly be said to come within this category.

(1.) The engagement by China not to alienate or lease to another Power the province of Shantung or any portion of it or any island lying near the coast of said province.

(2.) The engagement by China not to alienate or lease to a third Power any ports or bays on, or islands off, the coast of China.

(3.) The Chinese Government must engage influential Japanese as political, financial and military advisers.

(4.) The police in localities where such arrangements are necessary must be placed under joint Japanese and Chinese administration or else Japanese must be employed as police officers in such localities.

To these must be added the five that were enumerated when we considered the manner in which Japan had kept her pledge to respect the principle of equal opportunity. It will scarcely be maintained seriously that these demands do not involve a most serious derangement of the *status quo*.

In the demand relating to the non-alienation of any portion of Shantung the Japanese communique says that the words "another Power" were employed and not "third Power." This is another instance of deliberate inexactitude in order to mislead foreign opinion. What Japan sought was the recognition by China that Shantung was under Japanese political influence and that no nation *other than Japan* had the right to lease any portion of the province. This would obviously be an alteration of the *status quo* as it would involve the acquisition by Japan of a greater degree of political control over Shantung than was possessed by Germany. As Japan has persisted in ignoring the promises she made in regard to the retrocession of Kiaochou and has, in effect, demanded that she should be vested with all the rights and privileges that Germany possessed in Shantung, it is obvious that the political equilibrium in China is affected, inasmuch as German influence is replaced by Japanese. But it might be argued that this is only the substitution of one foreign influence for another, and that, therefore, there is no real disturbance of the *status quo*. To refute this argument would be easy, but, even if it could be upheld, the claim of Japan for an *additional* recognition of her special political interests involved in the non-alienation demand is obviously a real disturbance of the existing conditions.

If any doubt be felt in regard to Japan's intention to disturb the *status quo* the demand in Group IV that China should alienate no portion of her coast line to any third Power is conclusive proof that Japan deliberately sought to induce China to agree to the subversion of the principle by which the independence of China was safeguarded, a principle that Japan had solemnly pledged herself to maintain. There should be no misapprehension as to the meaning of this demand. Had China agreed to it she would have admitted (1.) that her sovereignty was qualified by Japan's right to shape China's foreign policy, (2.) that Japan possessed political interests in the whole of China that no other Power possessed.

It must not be forgotten that Japan significantly omitted in her communique any reference to the preservation of the *status quo*, and the independence of China. It would have been difficult, even for Japanese diplomacy, to explain how the preservation of China's independence could be reconciled with the assumption by Japan of the right to determine how China's sovereign rights should be exercised. This demand was a direct violation of the provisions of the Anglo-Japanese Alliance. In the preamble of the Treaty of Alliance three "objects" for which it was concluded are given. The second of these reads:—

> "The preservation of the common interests of all Powers in China by ensuring the independence and integrity of the Chinese Empire and the principle of equal opportunity for the commerce and industry of all nations in China."

China would cease to be independent if she were to acquiesce in the demand that Japan could dictate China's policy in regard to her relations with foreign Powers. It was the acquisition by Japan of the right to dictate Korea's policy in this respect that led to that unhappy country becoming a Japanese province, notwithstanding the fact that its independence was guaranteed by Japan. That a similar fate will overtake China if her statesmen are ever prevailed upon to permit Japan to become the sole guarantor of her independence, can scarcely be doubted.

At present China is a sovereign state. It is true that restrictions have been placed upon the exercise of her sovereign rights. The absence of efficient judicial institutions led to the reservation by the Treaty Powers of extra-territorial jurisdiction over their subjects and citizens in China. It also led to the establishment in certain localities of settlements and concessions over which the Chinese Government have no control. But with all this China is still a sovereign state. In recognition of her lack of military strength she has tacitly agreed to the guarantee by certain Powers that her sovereignty and independence shall be maintained. This guarantee she had regarded as a shield to protect her from aggression until she has reorganized her Government and defence forces and is able herself to protect her sovereignty and independence. Japan, in defiance of numerous express undertakings not to seek to disturb the *status quo*, demanded that China should exchange the exercise of her sovereignty under international guarantee, for the protection of Japan.

While the non-alienation demand was intended to assert Japan's right to dictate China's foreign policy, those in regard to the employment of Japanese advisers and joint administration by Japanese and Chinese of police affairs in certain places were designed to give Japan control of China's domestic policy. As a sovereign state China is free to engage the services of advisers or not to do so, but it will be remarked that in the Japanese communique the imperative word "must" is employed in setting out these demands. If China were to be compelled to regulate her domestic administration in accordance with imperative orders by Japan it would be clear that her sovereignty had ceased to exist.

Perhaps it may be useful at this juncture to recall that Count Okuma showed a laudable desire to correct the impression that Japan was seeking to impair China's sovereignty and thus to alter the *status quo*. He was interviewed by a representative of the Tokyo Kokusai News Agency—a semi-official concern—on April 3, and his statement was in these terms:—

> "Our negotiations in Peking are progressing favourably towards an early and satisfactory conclusion. *It is untrue that the Chinese Government has endeavoured unduly to delay the adjustment*, but misinformation has been scattered broadcast largely by German interests and this has given agitators in China an opportunity. Japan's propositions are in complete accord with the Anglo-Japanese Alliance and with all treaties and engagements with other countries guaranteeing equal opportunity and the integrity of China. The criticisms and uneasiness in England and America are caused by misinformation. Japan is not seeking to establish any monopoly in China or improperly to infringe the rights and interests of other Powers. *Japan has not demanded the appointment of Japanese advisers;* she is not seeking to create a protectorate over China; has not demanded joint policing except at points in South Manchuria where important interests have been threatened by lawlessness. I can assert that deliberate attempts, mostly of German origin, have been made to misrepresent Japan's attitude, specially in America. But now all points have been cleared up and the interested Powers are acquainted with the Japanese proposals which largely constitute an endeavour to settle questions of long standing, some since the Russo-Japanese War. In Shantung Japan is only asking for what China had already granted to Germany. When the final disclosures are made it will be found that the entire situation has been grossly exaggerated."

For the moment we will not consider this astounding statement in detail but will confine ourselves to a single illustration of the singular propensity of the Japanese Government to affirm and deny a fact in practically the same breath:—

Count Okuma, the Japanese Premier, on April 3:—	*Japanese Government's communique of May 7, giving the demands presented on January 18:—*
"Japan has not demanded the appointment of Japanese advisers."	"The Central Chinese Government must engage influential Japanese as political, financial and military advisers."

It will be admitted that this is a most significant and convincing proof of the theory suggested earlier in this article that Japanese mentality is in a state of arrested development. Unfortunately, what would be crudely termed lying in regard to ordinary, every-day intercourse, is euphemistically styled diplomatic evasion in Governmental utterances. But, while this is so, it is inconceivable that statesmen of Western nations or America could descend to the incredible folly of telling a deliberate falsehood with the intention of admitting the falsity of the statement when it had served its purpose. During the elimination of ordinary moral standards caused by a struggle for national existence such things might be done, but Japan had not this excuse. With regret it must be recorded, but the fact seems incontrovertible, that the high international esteem with which Count Okuma has been hitherto regarded has been deliberately exploited in an endeavour to persuade the world that Japan was keeping her pledges, whereas she was treating her engagements with her ally and other Powers as mere scraps of paper.

The Shantung Demands

The most notable omission in the Group of four demands relating to the province of Shantung is any reference to the engagement entered into by Japan to restore the leased territory

of Kiaochou to China. That engagement was clearly given when Japan issued the ultimatum to Germany "advising" her to deliver to Japan the entire leased territory of Kiaochou "with a view to the eventual restoration of the same to China." As the retrocession of Kiaochou was deemed of such supreme importance by Japan that she made it one of the leading features of an Ultimatum, it is a remarkable fact that she abstained from mentioning the matter either in the preamble to the group of demands in regard to Shantung or in the introductory portion of her communique in which she explains why the twenty-one demands were presented. The communique states that the main object was "to adjust matters to meet the new situation created by the war between Japan and Germany, and to bring closer the friendly relations subsisting between Japan and China." The chief feature of the "new situation" was that Japan was in a position to secure fulfilment of her desire that Kiaochou should be retroceded, and an announcement that she intended, at the earliest possible moment, to restore the territory to China, it would be imagined, would be an exceptionally good method of bringing closer the friendly relations subsisting between Japan and China. But the Japanese Government took "special care" to ignore its undertaking in the communique. In the Ultimatum to China they go farther and declare "after the acquisition (of Kiaochou) *the Empire incurs no obligation to restore it to China*. This view, perhaps, should be accepted, as the only obligation was a Japanese promise.

The explanation of Japan's avoidance of any reference to the restoration of Kiaochou to China is found in the first article of the four demands relating to Shantung. China is asked to consent to all matters agreed upon by Japan and Germany in regard to the disposition of all rights, interests and concessions, which, in virtue of treaties or otherwise, Germany possesses in relation to the Province of Shantung. This is a clear intimation that Japan considers that she is entitled to occupy the position in Shantung formerly occupied by Germany, or rather a strengthened position, as she demanded that in opening places for foreign trade in Shantung the localities should be selected after consultation with Japan. Later Japan demanded that the regulations in regard to these Treaty Ports should be first submitted to the Japanese Minister. It is clear by these demands that Japan intended to secure the recognition of her "special interests" in Shantung, in spite of the fact that by the terms of the Ultimatum to Germany and numerous official statements she led the world to believe that her sole motive was to drive Germany out of China and so remove what was regarded as a menace to the peace of the Far East. Count Okuma, in particular, left no effort unexpended to convince the Western nations and America that Japan's action was blemished by no trace of self-seeking.

South Manchuria and Eastern Inner Mongolia

In the Japanese communique no reference is made to the fact that the preamble to the seven demands relating to South Manchuria and Eastern Inner Mongolia contained the words "since the Chinese Government has always acknowledged the special position enjoyed by Japan in South Manchuria and Inner Eastern Mongolia." Possiby the Japanese Government thought it wise not to emphasize the fact that one of their diplomatic methods is to cajole or coerce China into an admission of an obvious untruth. China had never acknowledged that Japan enjoyed a special position in Eastern Inner Mongolia. As the Chinese communique points out there are no treaties in existence that were entered into with Japan regarding this region.

Another illustration of a deliberate intention to mislead is the rendering found in the Japanese communique of the demand relating to mining in South Manchuria and Eastern Inner Mongolia. It is stated that it was sought to gain for Japanese mining rights for *certain specified mines*. But in the official translation of the original demands there is no allusion to "certain specified mines." It was demanded that Japanese subjects should be granted the right of opening *the* mines in South Manchuria and Eastern Inner Mongolia, what mines to be opened to be decided jointly. *At a later stage* certain areas were specified, but the original demand gave Japan the option over *all* mining areas in the regions in question. To present their case in a better light to the world the Japanese Government has not scrupled to pretend that their original demands were different in character from what they really were.

There is no necessity to go through these demands in detail. In another portion of this article it has been shown that they were subversive of China's sovereignty and violated the principle of equal opportunity which Japan had pledged herself to maintain.

Equivocation and Misrepresentation

Having disposed of the demands themselves it is well to consider the allegations made against China in the Japanese communique. It will be remarked that these are general in character and for the greater part consist merely of assertions without any evidence being presented to show that they are well grounded. These charges are that the Chinese Government made public the Japanese demands in various exaggerated forms and endeavoured to stir up the feelings of the Powers against Japan; that they persisted in protracting the negotiations; that they failed to appreciate the friendly attitude of Japan; that they refused to accede to various demands on the ground that they were derogatory to the sovereign rights of China or conflicted with treaties with other Powers, *although the Japanese Minister explained that such was not the case*, and that they had asked Japan to keep her promise to restore Kiaochou.

If China had communicated the Japanese demands to the Treaty Powers—and no evidence is advanced to show that she did—she would have been simply fulfilling her duty and showing her desire honourably to meet her obligations. China has entered into certain undertakings with the Powers, and if she believed that she was being forced to break faith it would be eminently proper for her to communicate her fears to the Governments concerned. Unfortunately, she did not do so, weakly yielding to the quite understandable demand by Japan that the utmost secrecy should be maintained. The fierce, white light of publicity was feared by Japan because she recognised that if it were known what she was attempting to do she would be regarded with suspicion and aversion by those whose interests she was endeavouring to damage, and that pressure of some kind would be brought to defeat her objects. If she could secure China's compliance to the establishment of Japanese suzerainty over China and the negation of the principle of equal opportunity before the Powers became aware that Japan was violating her pledges, it was possible that a war-weary world would acquiesce in *au fait accompli*. Realizing this, Japan insisted that China should abstain from informing the Powers that their interests were threatened, but she herself issued a garbled and incomplete version of the demands. It argues a lamentable lack of a sense of humour on the part of the Japanese Government when it is found that they accuse China of causing to be published exaggerated forms of the demands, after the Japanese Government themselves have been openly convicted of publishing a wantonly mendacious statement for the express purpose of misleading the Powers.

The accusation that the Chinese Government persisted in protracting the demands is strikingly answered in the Chinese official communique. It is there shown that the Chinese Government made every endeavour to expedite matters. They agreed to everything the Japanese Minister proposed in regard to procedure, and even, though with great reluctance, consented to the Japanese Minister's significant desire that no jointly signed minutes of each conference should be kept. By April 17, China had agreed to fifteen of the twenty-one original demands in principle. Considering the far-reaching nature of the demands and the fact that China's sovereignty was involved, this speaks volumes for the genuineness of the desire of the Chinese Government to meet Japan's wishes as far as possible with the utmost expedition. But it is not necessary to rely solely upon the official Chinese communique to show the utter falsity of the charge. We find that Count Okuma himself in the statement made to the semi-official Kokusai News Agency on April 3, made the following remarkable admission:—

"It is untrue that the Chinese Government has endeavoured unduly to delay the adjustment."

Need more be advanced to show the utter hollowness and insincerity of Japan's indignation at China's alleged dilatoriness?

China is censured in the Japanese communique because she failed to appreciate the friendly attitude of Japan. Austria-Hungary, when she presented her punitive demands to Serbia, was not sufficiently unwise to pretend that their presentation was an indication of ardent friendship. Yet Japan, after presenting punitive demands to China when China had done nothing to deserve punishment, professes to be pained and surprised because China does not accept this as a proof of Japan's friendly attitude. Even the despatch of large bodies of Japanese troops to South Manchuria and Shantung and the statement by the Japanese Minister that the troops would not be withdrawn until the negotiations were brought to a satisfactory conclusion, failed to convince the Chinese Government of the sincerity of the desire of the Japanese Government to draw closer the friendly relations between the two nations. If Japan is really surprised that China does not regard as a proof of friendship the presentation of punitive demands at the point of the bayonet, then it is obvious that her mentality is defective; if she is not really surprised she is convicted of insincere posturing.

It is regarded as presumptuous on the part of China to demur at accepting certain demands in the belief that they affected her sovereignty or conflicted with treaties with other Powers. The Japanese Minister told her that she was mistaken! The naïve suggestion by the Japanese Government that their diplomatic agents are in a position to decide once for all the incidence of treaties between other countries, is a curious illustration of Japanese belief in the omnipotence of Japanese diplomatic judgment. China might be expected to know more about the incidence of treaties that affected herself than Japan, but it is held against her for unrighteousness that she should not instantly accept the views of a Japanese diplomat who, as far as we are aware, has not won a world-wide and commanding reputation as an interpreter of international law.

The last one of the charges that we have deemed it necessary to take into consideration is that relating to China's request that Japan should keep her promise to restore Kiaochou. It is difficult to understand on what ground Japan could raise any objection to this request. At the conference on February 2, China, in view of the fact that Japan had officially communicated to her the terms of the Ultimatum to Germany embodying the pledge to restore Kiaochou to China, asked that the pledge should be officially recorded. If the Japanese Government had been actuated by good faith they would have agreed to this without demur, but, at the request of the Japanese Minister the matter was postponed. When on May 1 the Chinese Government reiterated their request, the Japanese Government adopted the attitude that this was anoutrageous "counter-demand" and declared that China did not manifest the least appreciation for Japan's good will and difficulties. It is abundantly clear that the real cause of Japan's indignation was the persistence of the Chinese Government in the endeavour to keep her to a promise that she did not intend to fulfil in any real sense.

Japan and British Interests

One of the most remarkable of the demands was that relating to the railways connecting Wuchang with Kiukiang and Nanchang, between Nanchang and Hangchow, and between Nanchang and Chaochow. The Japanese communique admits that Japan demanded the right to construct these lines. Realizing that this was very delicate ground the communique passes over it with the utmost despatch. It says.—"As regards South China railways, the relations with third parties especially were respected and alterations were made accordingly." As in a few lines earlier it was declared that the Japanese Minister had explained that the various questions enumerated under Group V (among which was the railway demand) did not conflict with treaties with other Powers, it seems singular that "alterations" were necessary. If it were true that the demand did not conflict with the interests of Great Britain it is evident that there was no need to alter it. If the demand did conflict with the interests of Great Britain then *Japan stands convicted, by her own official communique, of taking advantage of her Ally's preoccupation in a life and death struggle to endeavour to deprive her of her rights and privileges* in a region of China specially associated with British activity. That the original demand does conflict with the interests of Great Britain is beyond question, and is admitted by the Japanese Government by its action in drastically revising the demand. But the revision does not alter the fact that the Japanese Government deliberately pressed the acceptance of a demand upon China that was designed to injure British interests. China pointed out that the demand conflicted with the Shanghai-Hangchow-Ningpo Railway Agreement of March 6, 1908, the Nanking-Changsha RailwayAgreement of March 31, 1914, and the engagement of August 24, 1914, giving preference to British firms for the line from Nanchang to Chaochow. In spite of his attention being called officially to China's engagements with Great Britain, the Japanese Minister repeatedly pressed for the acceptance of the demand in *its original form*.

There is little more that can usefully be said. We have endeavoured dispassionately and impartially to analyse the official communique of the Japanese Government by subjecting it to the acid of established facts. The analysis has been conducted in no spirit of prejudice, and no inference has been drawn or conclusion arrived at that is not justified by the available evidence, most of which has been supplied by the Japanese Government. The sole desire has been, in the interests of historical accuracy, to correct misconceptions and refute misrepresentations. If in so doing we have been compelled to show that Japan ignores the verities when she does not suppress them, the fault does not lie with us. If it has been made apparent that a willingness has been displayed on the part of Japan to violate solemn treaty engagements; to mislead the Treaty Powers; to compel acquiescence with unjust demands by menace of war; to suppress or pervert the truth; to take advantage of an Ally's inability to protect her rights to secure them for herself; to plunge the Far East into war on admittedly insufficient grounds, and to drag her national reputation through the dust of deceit, Japan has only to thank her own Government for the cynical candour of their official communique.

OFFICIAL STATEMENT BY THE CHINESE GOVERNMENT RESPECTING THE SINO-JAPANESE NEGOTIATIONS NOW BROUGHT TO A CONCLUSION BY CHINA'S COMPLIANCE WITH THE TERMS OF JAPAN'S ULTIMATUM DELIVERED ON MAY 7, 1915.

At three o'clock on the afternoon of May 7, 1915, His Excellency the Japanese Minister in Peking delivered to the Chinese Government in person an Ultimatum from the Imperial Japanese Government, with an accompanying Note of seven articles. The concluding sentences of the Ultimatum read thus:

> "The Imperial Government hereby again offer their advice and hope that the Chinese Government, upon this advice, will givie a satisfactory reply by six o'clock p.m. on the nnth day of May. It is hereby declared that if no satisfactory reply is received before or at the specified time the Imperial Government will take such steps as they may deem necessary".

The Chinese Government, having received and accepted the Ultimatum, feel constrained to make a frank and plain statement of the facts connected with the negotiations which were abruptly terminated by this drastic action on the part of Japan.

The Chinese Government have constantly aimed, as they still aim, at consolidating the friendship existing between China and Japan, and, in this period of travail in other parts of the

world, have been particularly solicitous of preserving peace in the Far East. Unexpectedly on January 18, 1915, His Excellency the Japanese Minister in Peking, in pursuance of instructions from his Government, adopted the unusual procedure of presenting to His Excellency the President of the Republic of China a list (hereto appended) of twenty-one momentous demands, arranged in five Groups. The first four Groups were each introduced by a preamble, but there was no preamble or explanation to the Fifth Group. In respect of the character of the demands in this Group, however, no difference was indicated in the document between them and those embodied in the preceding Groups.

Although there was no cause for such a *démarche*, the Chinese Government, in deference to the wishes of the Imperial Japanese Government, at once agreed to open negotiations on those articles which it was possible for China to consider, notwithstanding that it was palpable that the whole of the demands were intended to extend the rights and interests of Japan without securing a *quid pro quo* of any kind for China.

China approached the pending conferences in a spirit of utmost friendliness and with a determination to deal with all questions frankly and sincerely. Before negotiations were actually commenced the Japanese Minister raised many questions with regard to the number of delegates proposed to represent China, the number of conferences to be held in each week, and the method of discussion. The Chinese Government, though their views differed from those of the Japanese Minister, yielded in all these respects to his contentions in the hope of avoiding any delay in the negotiations. The objections of the Japanese Minister to the customary recording and signing of the minutes of each conference, which the Chinese Government suggested as a necessary and advisable precaution, as well as one calculated to facilitate future reference, were also accepted. Nor did the Chinese Government retaliate in any way when in the course of the negotiations the Japanese Minister twice suspended the conferences, obviously with the object of compelling compliance with his views on certain points at the time under discussion. Even when delay was threatened owing to the unfortunate injury sustained by the Japanese Minister as a result of a fall from his horse, the Chinese delegates, in order to avert interruption, proposed that the conferences should be continued at the Japanese Legation, which proposal was accepted. Later, when, on March 22, the Japanese Government despatched large bodies of troops to South Manchuria and Shantung for the ostensible purpose of relieving the garrison—whose term of service had not then expired —the Japanese Minister stated at the conference, in reply to a direct question as to when the retiring troops would be withdrawn, that this would not be done until the negotiations could be brought to a satisfactory conclusion. Although this minatory step caused much excitement, indignation and alarm on the part of the Chinese people, and made it difficult for the Chinese Government to continue the conferences, they successfully exerted efforts to avert a rupture and thus enabled the negotiations smoothly to proceed. All this demonstrates that the Chinese Government were dominated by a sincere desire to expedite the progress of the conferences; and that the Japanese Government recognized this important fact was made clear on March 11 when the Japanese Minister conveyed to the Chinese Government an expression of his Government's appreciation of China's frankness and sincerity in the conduct of the negotiations.

From February 2, when the negotiations were commenced, to April 17, twenty-four conferences were held in all. Throughout this whole period the Chinese Government steadfastly strove to arrive at an amicable settlement and made every concession possible.

Of the twenty-one demands originally submitted by Japan, China agreed to fifteen, some in principle and some textually, six being initialled by both parties.

In the Matter of the Demands to which China Agreed

At the first conference, held on February 2, China agreed in principle to the first article of the Shantung group of demands which provides that China should give her assent to the transfer of Germany's rights in Shantung to Japan. The Chinese Government maintained at first that the subject of this demand related to the *post bellum* settlement, and, therefore, should be left over for discussion by all the parties interested at the Peace Conference. Failing to persuade the Japanese Minister to accept this view, the Chinese Government agreed to this demand in principle, and made certain supplementary proposals.

One of the supplementary proposals was in these terms:—

> "The Japanese Government declares that when the Chinese Government give their assent to the disposition of interests above referred to, Japan will restore the Leased Territory of Kiaochow to China, and further recognizes the right of the Chinese Government to participate in the negotiations referred to above between Japan and Germany."

The provision for a declaration to restore Kiaochow was clearly not a demand on Japan but only a reiteration of Japan's voluntary statement in her Ultimatum to Germany on August 15, 1914, (a copy of which was officially transmitted to the Chinese Government for perusal on August 15), and repeated in public statements by the Japanese Premier. Appreciating the earnest desire of Japan to maintain the peace of the Far East and to cement her friendship with China, as evidenced by this friendly offer, the Chinese Government left the entire question of the conditions of restoration to be determined by Japan, and refrained from making any reference thereto in the supplementary proposal. The suggestion relating to participation in the Conference between Japan and Germany was made in view of the fact that Shantung, the object of future negotiation between Japan and Germany, is a Chinese Province, and therefore China is the Power most concerned in the future of that territory.

Another supplementary proposal suggesting the assumption by Japan of responsibility for indemnification of the losses arising out of the military operations by Japan in and about the leased territory of Kiaochow was necessitated by the fact that China was neutral *vis-a-vis* the war between Japan and Germany. Had China not inserted such a provision, her position in relation to this conflict might have been liable to misconstruction—the localities in which the operations took place being a portion of China's territory—and might also have exposed herself to a claim for indemnification of losses for which she was in no way responsible.

In a further supplementary proposal the Chinese Government suggested that, prior to the restoration of the Kiaochow territory to China, the Maritime Customs, the telegraphs and post offices should be continued to be administered as heretofore; that the military railway, the telegraph lines, etc., which were installed by Japan to facilitate her military operations, should be removed forthwith; that the Japanese troops now stationed outside of the leased territory should be first withdrawn, and those within the territory should be recalled at the time when Kiaochow is returned to China. Shantung being a Chinese Province, it was natural for China to be anxious concerning the restoration of the *status quo ante bellum*. Although the Chinese Government were confident that the Japanese Government would effect such restoration in pursuance of their official declaration, it was necessary for China, being neutral throughout the war, to place these matters on record.

At the third conference, held on February 22, China agreed to the second demand in the Shantung Group not to cede or lease to any Power any territory or island on the sea border of Shantung.

At the fifth conference, held on February 29, China agreed to give Japan the perference, provided Germany abandoned the privilege, to supply the capital for the construction of a railway from Chefoo or Lungkow to connect with the Kiaochow-Tsinanfu railway, in the event of China deciding to build that railway with foreign capital.

At the sixth conference, held on March 3, China, in the interests of foreign trade, agreed to open certain important cities in Shantung as trade marts under regulations approved by the Japanese Government, although this was a demand on the part of Japan for privileges additional to any that hitherto had been enjoyed by Germany and was not an outcome of the hostilities

between Japan and Germany, nor, in the opinion of the Chinese Government, was its acceptance essential to the preservation of peace in the Far East.

At the eighth conference, held on March 9, China agreed (1) to the extension of the term of the lease of Dairen and (2) Port Arthur, and (3) of the South Manchuria and (4) Antung-Mukden railways, all to 99 years.

Owing to the bitter experiences which China sustained in the past in connexion with the leased portions of her territory, it has become her settled policy not to grant further leases nor to extend the term of those now in existence. Therefore, it was a significant indication of China's desire to meet Japan's wishes when she agreed to this exceptional departure from her settled policy.

At the same conference the Chinese Government also agreed to refrain from raising objections to the principle of co-operation in the Hanyehping Company, if the latter should arrive at an agreement in this respect with the Japanese capitalists concerned. With reference to this question it was pointed out to the Japanese Minister that, in the Provisional Constitution of the Republic of China, Chinese subjects are guaranteed the right of protection of their property and freedom to engage in any lawful occupation. The Government were precluded, therefore, from interfering with the private business of the people, and could not find any other solution than the one thus agreed to.

As regards the single article of the Fourth Group, and the preamble thereto, the Chinese Government held that they were inconsistent with Chinese sovereignty. However, China, at this conference, expressed her readiness to meet the wishes of Japan so far as it was possible without infringing her sovereignty, and agreed to make a voluntary pronouncement that she would not alienate any portion of her coast line.

In connexion with the South Manchuria Railway it is worthy of note that the provision regarding the repurchase period in the agreement (36 years from 1902) was not mentioned in Japan's original proposal. Subsequently the Japanese Government, on the ground that the meaning of this provision was not clear, requested China to agree to its cancellation. To this request the Chinese Government acceded, though well aware that the proposed change could only benefit Japan. China thus relinquished the right to repurchase the railway at the expiration of another 23 years.

In connexion with the Antung-Mukden Railway, the article, which was originally initialled at the conference, provided for the reversion of the railway to China at the end of 99 years without payment, but, at the subsequent meeting, the Japanese Minister requested that the reference to the reversion without payment be deleted from the initialled article. In acceding to the Japanese Minister's request, China again showed her sincere desire to expedite matters and to meet Japan's wishes even at the sacrifice of a point in her favour, to which Japan had already agreed.

At the eleventh conference, held on March 16, China agreed to give Japan preference in regard to loans for railway construction in South Manchuria.

At the thirteenth conference, held on March 23, China agreed (1) to the amendment of the Kirin-Changchun Railway loan agreement; (2) to give preference to Japan if the revenue of South Manchuria were offered as security for loans; (3) to give preference to Japanese in the event of the employment of advisers for South Manchuria; (4) to grant to Japanese the right of mining in nine specified areas in South Manchuria.

In its original form the demand with reference to mining in South Manchuria tended to create a monopoly for Japanese subjects, and, therefore, was entirely inconsistent with the principle of equal opportunity. The Chinese Government explained that they could not, in view of the treaty rights of other Powers, agree to this monopoly, but they readily gave their acceptance when Japan consented to the modification of the demand so as to mitigate its monopolistic character.

In connexion with the Kirin-Changchun Railway, the amendment agreed to involve a fundamental revision of the original agreement on the basis of the existing railway loan contracts concluded by China with other foreign capitalists, as well as an engagement on the part of the Chinese Government to extend to this railway any better terms which may be hereafter accorded to other railway concessionaires in China. The capital of this railway was originally fifty per cent Chinese and fifty per cent Japanese. The effect of this undertaking is to transfer the capital originally held by the Chinese, as well as the full control and administration of the railway, to the Japanese.

At the twenty-first conference, held on April 10, China agreed, in regard to the demands concerning Fukien Province, to give Japan an assurance in accordance with Japan's wishes at a future time.

As regards demands 2 and 3 in the Manchurian Group, relating to the ownership of land for trade, manufacture, and agricultural enterprises, as well as for the right of settlement in the interior of South Manchuria, the Chinese Government, after discussion at several conferences, agreed to them in principle, but desired to introduce certain amendments concerning the control and protection of the Japanese subjects who might avail themselves of these rights. The course of the negotiations in connexion with these amendments will be referred to subsequently.

In the Matter of Those Demands to Which China Could not Agree

Of the twenty-one original demands there were six, as previously mentioned, to which China could not agree on the ground that they were not proper subjects for international negotiation, conflicting as they did with the sovereign rights of China, the treaty rights of other Powers, and the principle of equal opportunity.

Thus, for example, the second article of the Hanyehping question in the original Third Group in particular seriously affected the principle of equal commercial opportunity.

The proposal that there should be joint administration by China and Japan of the police in China was clearly an interference with the Republic's domestic affairs, and consequently an infringement of her sovereignty. For that reason the Chinese Government could not take the demand into consideration. But when it was explained by the Japanese Minister that this referred only to South Manchuria, and he suggested that his Government would be satisfied if China agreed to engage Japanese as police advisers for that territory, the Chinese Government accepted the suggestion.

The two articles relating to the acquisition of land for schools, hospitals, and temples, as well as to the right of missionary propaganda, would, in the opinion of the Chinese Government, have presented grave obstacles to the consolidation of the friendly feeling subsisting between the two people. The religions of the two countries are identical and, therefore, the need for a missionary propaganda to be carried on in China by Japanese does not exist. The natural rivalry between Chinese and Japanese followers of the same faith would tend to create incessant disputes and friction. Whereas Western missionaries live apart from the Chinese communities among which they labour, Japanese monks would live with the Chinese; and the similarity of their physical characteristics, their religious garb, and their habits of life would render it impossible to distinguish them for purposes of affording the protection which the Japanese Government would require should be extended to them under the system of extra-territoriality now obtaining in China. Moreover a general apprehension exists among the Chinese people that these peculiar conditions favouring conspiracies for political purposes might be taken advantage of by some unscrupulous Chinese.

The demand for railway concessions in the Yangtsze Valley conflicted with the Shanghai-Hangchow-Ningpo Railway Agreement of March 6, 1908, the Nanking-Changsha Railway Agreement of March 31, 1914, and the engagement of August 24, 1914, giving preference to British firms for the projected line from Nanchang to Chaochowfu. For this reason the Chinese Government found themselves unable to consider the demand, though the Japanese Minister, while informed of China's engagements with Great Britain, repeatedly pressed for its acceptance.

In respect to the demand for the appointment of influential Japanese to be advisers and instructors in political, financial and military affairs, the policy of the Chinese Government in regard

to the appointment of advisers has been similar to that which has presumably guided the Japanese Government in like selection of the best qualified men irrespective of their nationality. As an indication of their desire to avail themselves of the services of eminent Japanese, one of the earliest appointments made to an advisership was that of Dr. Ariga, while later on Dr. Hirai and Mr. Nakayami were appointed to the Ministry of Communications.

It was considered that the demand that Japanese should be appointed in the three most important administrative departments, as well as the demand for the joint control of China's police, and the demand for an engagement to purchase a fixed amount of arms and ammunition from Japan or to establish joint arsenals in China, so clearly involved the sovereignty of the Republic that the Chinese Government were unable even to consider them.

For these reasons the Chinese Government, at the very outset of the negotiations, declared that they were unable to negotiate on the demands; but, in deference to the wishes of the Japanese Minister, the Chinese delegates consented to give the reasons for declining to enter into a discussion of them.

In the Matter of the Questions of Dispute Involved in Some of the Foregoing Demands

The demand by Japan for the right of her subjects in South Manchuria to lease or own land, and to reside and travel, and to engage in business or manufacture of any kind whatever, was deemed by the Chinese Government to obtain for Japanese subjects in this region a privileged status beyond the terms of the treaties existing between the two nations, and to give them a freedom of action which would be a restriction of China's sovereignty and a serious infringement of her administrative rights. Should Japanese subjects be granted the right of owning land, it would mean that all the landed property in the region might fall into their hands, thereby endangering China's territorial integrity. Moreover, residence in the interior was incompatible with the existence of extra-territoriality, the relinquishment of which is necessary to the actual enjoyment of the privilege of inland residence, as evidenced in the practice of other nations.

Japan's unconditional demand for the privilege of inland residence accompanied with a desire to extend extra-territoriality into the interior of China and to enable Japanese subjects to monopolize all the interests in South Manchuria, was also palpably irreconcilable with the principle of equal opportunity. For this reason the Chinese Government were, in the first instant, unable to accept this demand as a basis of negotiation. Their profound regard for the friendly relations of the two countries, however, persuaded them to exert their utmost efforts, in spite of all the inherent difficulties, to seek a solution of a question which was practically impossible to solve. Knowing that the proposal made by Japan was incompatible with treaties, they nevertheless sought to meet her wishes within the limits of treaties. Accordingly they submitted a counter-proposal to open more places in South Manchuria to international trade and to establish Sino-Japanese joint reclamation companies.

This suggestion was made in the belief that the places to which Japanese subjects would desire to resort for purposes of trade, could not be other than important localities; if all these localities were opened to commerce, then they could reside, trade, and lease land there for joint reclamation. Thus Japanese subjects might enjoy the essence of the privilege of inland residence and would still be able to reconcile their position with China's treaties and the principle of equal opportunity.

After the Japanese Government declined to accept this suggestion, China withdrew it and replaced it with an amendment to the original articles. It was proposed in this amendment to grant to Japanese subjects the extra-treaty privilege of inland residence with the provisos that Japanese subjects in places outside of trade marts should observe Chinese police regulations and pay taxes in the same manner as Chinese; and that civil and criminal cases involving such Japanese subjects should be adjudicated by Chinese Authorities, the Japanese Consul attending merely to watch the proceedings. This suggestion was not an innovation; it was based upon the *modus operandi* now in force as regards the Korean settlers in inland districts in Chientao. But the Japanese Government again declined to accept it.

The Chinese Government thereupon made a third proposal along the line of what constitutes the present practice in Turkey, making a distinction, however, in favour of Japanese subjects, in the exercise of jurisdiction over civil and criminal cases. This was once more objected to by the Japanese Government.

Then the Chinese Government proposed to concede still another step—the fourth endeavour to meet Japan's wishes. They proposed to agree to the full text of Articles 2 and 3 relative to the question of inland residence, except that "the right of owning land" was changed into "the right of leasing land" and to the phrase "cultivating land" was added this clause: "the regulations for which shall be determined separately;" and, further, to add a supplementary article which embodied a *modus operandi* which the Chinese Government had constrained themselves to make, out of a desire to come to a settlement over this question. The view advanced in this supplementary article was based upon the Japanese Minister's declaration made on March 6, 1915, that a separate article embodying some compromise might be added to the original articles 2 and 3 for the purpose of avoiding any conflict with China's sovereignty or the system established by treaties. These suggestions made by the Chinese Government were not accepted by Japan.

As regards Eastern Inner Mongolia, not only have no treaties been entered into with Japan concerning this region, but also the people are so unaccustomed to foreign trade, that the Chinese Government invariably feel much anxiety about the safety of foreigners who elect to travel there. The Chinese Government, therefore, considered that it would not be in the interest of foreigners to open the whole territory to them for residence and commerce, and on these grounds based their original refusal to place Eastern Inner Mongolia on the same footing as South Manchuria. Still, their desire to meet the wishes of the Japanese Government eventually prompted them to offer to open a number of places in the region to foreign trade.

In the Matter of Japan's Revised Demands

The foregoing is an outline of the negotiations up to April 17. It was hoped by the Chinese Government that the Japanese Government, in view of the great concessions made by China at the conferences held up to this time, would see a way of effecting an amicable settlement by modifying their position on certain points. In regard to these it had, by this time, become manifest that China would encounter almost insuperable difficulties in making further concessions.

The Japanese Government, however, suspended the negotiations until April 26 when they surprised the Chinese Government by presenting a new list of twenty-four demands (which is hereto appended), and requested the Chinese Government to accord their acceptance without delay, adding that this was their final proposal. At the same time the Japanese Minister stated that the Japanese Government would restore the leased territory of Kiaochow to China at an opportune time in the future and under proper conditions, if the Chinese Government would agree to the new list of twenty-four demands without modification.

In this new list, although the term "special position" in the preamble of the Manchurian Group was changed to "economic relations," and although the character of the articles in the original Fifth Group was altered from Demands to a recital of alleged statements by the Chinese Foreign Minister, four new demands were introduced concerning Eastern Inner Mongolia. In deference to the wishes of the Japanese Government, the Chinese Government gave the revised list the most careful consideration; and being sincerely desirous of an early settlement, offered new concessions in their reply presented to the Japanese Minister on May 1. (Annexed.)

In this reply the Chinese Government reinserted the proposal in reference to the retrocession of Kiaochow, which they advanced at the first conference on February 2, and which was postponed at the request of the Japanese Minister. This, therefore, was in no sense a new proposal.

The Chinese Government also proposed to agree to three of the four articles relating to Eastern Inner Mongolia. There was

some difficulty in determining a definition of the boundaries of Eastern Inner Mongolia—this being a new expression in Chinese geographical terminology—but the Chinese Government, acting upon a statement made at a previous conference by the Japanese Minister that the Japanese Government meant the region under Chinese administrative jurisdiction, and taking note, in the list presented by the Japanese Minister, of the names of places in Eastern Inner Mongolia to be opened to trade, inferred that the so-called Eastern Inner Mongolia is that part of Inner Mongolia which is under the jurisdiction of South Manchuria and the Jehol Intendency; and refrained from placing any limitations upon the definition of this term.

The Chinese Government also withdrew their supplementary proposal reserving the right of making regulations for agricultural enterprises to be undertaken by Japanese settlers in South Manchuria.

In respect of the trial of cases involving land disputes between Japanese only, or between Japanese and Chinese, the Chinese Government accorded to the Japanese Consul the right of deputing an officer to watch the proceedings.

The Chinese Government also agreed to accept the suggestion of the Japanese Government to modify the term "police law and ordinances" into "police rules and regulations," thereby limiting the extent of control which the Chinese would have over Japanese subjects.

As regards the Hanyehping demand, the Chinese Government accepted the draft made by the Japanese Government, embodying an engagement by the Chinese Government not to convert the Company into a State-owned concern, nor to confiscate it, nor to force it to borrow foreign capital other than Japanese.

In respect of the Fukien question the Chinese Government also agreed to give an assurance in the amplified form suggested by the Japanese Government that the Chinese Government had not given their consent to any foreign nations to construct a dockyard, or a coaling station, or a naval base, or any other military establishment along the coast of Fukien Province; nor did they contemplate borrowing foreign capital for the foregoing purposes.

Having made these concessions which practically brought the views of China into line with those of Japan, and having explained in a note accompanying the reply the difficulty for China to make further concessions, the Chinese Government hoped that the Japanese Government would accept their reply of May 1, and thus bring the negotiations to an amicable conclusion.

The Japanese Government, however, expressed themselves as being dissatisfied with China's reply, and withdrew the conditional offer to restore Kiaochow to China made on April 26. It was further intimated that if the Chinese Government did not give their full compliance with the list of twenty-four demands, Japan would have recourse to drastic measures.

Upon receiving this intimation the Chinese Government, inspired by the conciliatory spirit which had been predominant from the very beginning of the negotiations and desirous of avoiding any possible rupture in the relations of the two countries, made a supreme effort to meet the situation, and represented to the Japanese Government that they would reconsider their position and make another attempt to find a solution that would be more satisfactory to Japan, in respect to those articles which China had declared could not be taken up for consideration, but to which Japan attached great importance. Even in the evening of May 6, after the Japanese Minister had notified the Chinese Government that the Ultimatum had arrived in Peking, the Chinese Government in the interests of peace still exerted efforts to save the situation by offering to meet Japan's wishes.

These overtures were again rejected, and thus exhausted the means at the disposal of the Chinese Government to prevent an *impasse*.

It is plain that the Chinese Government proceeded to the fullest extent of possible concession in view of the strong national sentiment manifested by the people throughout the whole period of negotiations. All that the Chinese Government strove to maintain was China's plenary sovereignty, the treaty rights of foreign Powers in China and the principle of equal opportunity.

To the profound regret of the Chinese Government, however, the tremendous sacrifices which they had shown themselves ready to make, proved unavailing, and an Ultimatum (the text of which is appended) was duly delivered to them by the Japanese Minister at three o'clock on the afternoon of May 7.

As to the allegations made in the Ultimatum against China, the Chinese Government hope that the foregoing outline of the history of the negotiations constitutes a clear, dispassionate, and complete reply.

In considering the nature of the course they should take with reference to the Ultimatum the Chinese Government was influenced by a desire to preserve the Chinese people, as well as the large number of foreign residents in China, from unnecessary suffering, and also to prevent the interests of friendly Powers from being imperiled. For these reasons the Chinese Government were constrained to comply in full with the terms of the Ultimatum (the reply being hereto appended), but in complying the Chinese disclaim any desire to associate themselves with any revision, which may thus be effected, of the various conventions and agreements concluded between other Powers in respect of the maintenance of China's territorial independence and integrity, the preservation of the *status quo*, and the principle of equal opportunity for the commerce and industry of all nations in China.

THE DOCUMENTS IN THE SINO-JAPANESE NEGOTIATIONS

Japan's Twenty-one Demands

TRANSLATION OF DOCUMENT HANDED TO THE PRESIDENT, YUAN SHIH-KAI, BY MR. HIOKI, THE JAPANESE MINISTER, ON JANUARY 18TH, 1915.

The Japanese Government and the Chinese Government being desirous of maintaining the general peace in Eastern Asia and further strengthening the friendly relations and good neighborhood existing between the two nations agree to the following articles:—

Article 1. The Chinese Government engages to give full assent to all matters upon which the Japanese Government may hereafter agree with the German Government relating to the disposition of all rights, interests and concessions, which Germany, by virtue of treaties or otherwise, possesses in relation to the Province of Shantung.

Article 2. The Chinese Government engages that within the Province of Shantung and along its coast, no territory or island will be ceded or leased to a third Power under any pretext.

Article 3. The Chinese Government consents to Japan's building a railway from Chefoo or Lungkou to join the Kiaochou-Chinanfu Railway.

Article 4. The Chinese Government engages, in the interest of trade and for the residence of foreigners, to open by herself as soon as possible certain important cities and towns in the Province of Shantung as Commercial Ports. What places shall be opened are to be jointly decided upon in a separate agreement.

II

The Japanese Government and the Chinese Government, since the Chinese Government has always acknowledged the special position enjoyed by Japan in South Manchuria and Eastern Inner Mongolia, agree to the following articles:—

Article 1. The two Contracting Parties mutually agree that the term of lease of Port Arthur and Dalny and the term of lease of the South Manchurian Railway and the Antung-Mukden Railway shall be extended to the period of 99 years.

Article 2. Japanese subjects in South Manchuria and Eastern Inner Mongolia shall have the right to lease or own land required either for erecting suitable buildings for trade and manufacture or for farming.

Article 3. Japanese subjects shall be free to reside and travel in South Manchuria and Eastern Inner Mongolia and to engage in business and in manufacture of any kind whatsoever.

Article 4. The Chinese Government agrees to grant to Japanese subjects the right of opening the mines in South Manchuria and Eastern Mongolia. As regards what mines are to be opened, they shall be decided upon jointly.

Article 5. The Chinese Government agrees that in respect of the (two) cases mentioned herein below the Japanese

Government's consent shall be first obtained before action is taken:—

(*a*). Whenever permission is granted to the subject of a third Power to build a railway or to make a loan with a third Power for the purpose of building a railway in South Manchuria and Eastern Inner Mongolia.

(*b*). Whenever a loan is to be made with a third Power pledging the local taxes of South Manchuria and Eastern Inner Mongolia as security.

Article 6. The Chinese Government agrees that if the Chinese Government employs political, financial or military advisers or instructors in South Manchuria or Eastern Mongolia, the Japanese Government shall first be consulted.

Article 7 The Chinese Government agrees that the control and management of the Kirin-Changchun Railway shall be handed over to the Japanese Government for a term of 99 years dating from the signing of this Agreement.

III

The Japanese Government and the Chinese Government, seeing that Japanese financiers and the Hanyehping Co., have close relations with each other at present and desiring that the common interests of the two nations shall be advanced, agree to the following articles:—

Article 1. The two Contracting Parties mutually agree that when the opportune moment arrives the Hanyehping Company shall be made a joint concern of the two nations and they further agree that without the previous consent of Japan, China shall not by her own act dispose of the rights and property of whatsoever nature of the said Company nor cause the said Company to dispose freely of the same.

Article 2. The Chinese Government agrees that all mines in the neighborhood of those owned by the Hanyehping Company shall not be permitted, without the consent of the said Company, to be worked by other persons outside of the said Company; and further agrees that if it is desired to carry out any undertaking which, it is apprehended, may directly or indirectly affect the interests of the said Company, the consent of the said Company shall first be obtained.

IV

The Japanese Government and the Chinese Government with the object of effectively preserving the territorial integrity of China agree to the following special article:—

The Chinese Government engages not to cede or lease to a third Power any harbour or bay or island along the coast of China.

V

Article 1. The Chinese Central Government shall employ influential Japanese as advisers in political, financial and military affairs.

Article 2. Japanese hospitals, churches and schools in the interior of China shall be granted the right of owning land.

Article 3. Inasmuch as the Japanese Government and the Chinese Government have had many cases of dispute between Japanese and Chinese police which caused no little misunderstanding, it is for this reason necessary that the police departments of important places (in China) shall be jointly administered by Japanese and Chinese or that the police departments of these places shall employ numerous Japanese, so that they may at the same time help to plan for the improvement of the Chinese Police Service.

Article 4. China shall purchase from Japan a fixed amount of munitions of war (say 50% or more of what is needed by the Chinese Government) or that there shall be established in China a Sino-Japanese jointly worked arsenal. Japanese technical experts are to be employed and Japanese material to be purchased.

Article 5. China agrees to grant to Japan the right of constructing a railway connecting Wuchang with Kiukiang and Nanchang, another line between Nanchang and Hangchou, and another between Nanchang and Chaochou.

Article 6. If China needs foreign capital to work mines, build railways and construct harbour-works (including dock-yards) in the Province of Fukien, Japan shall be first consulted.

Article 7. China agrees that Japanese subjects shall have the right of missionary propaganda in China.

Japan's Revised Demands

JAPAN'S REVISED DEMANDS ON CHINA,
TWENTY-FOUR IN ALL, PRESENTED
APRIL 26, 1915

The revised list of articles is a Chinese Translation of the Japanese text. It is hereby declared that when a final decision is reached, there shall be a revision of the wording of the text.

GROUP I

The Japanese Government and the Chinese Government, being desirous of maintaining the general peace in Eastern Asia and further strengthening the friendly relations and good neighborhood existing between the two nations, agree to the following articles:—

Article 1. The Chinese Government engages to give full assent to all matters upon which the Japanese Government may hereafter agree with the German Government, relating to the disposition of all rights, interests and concessions, which Germany, by virtue of treaties or otherwise, possesses in relation to the Province of Shantung.

Article 2. (Changed into an exchange of notes) The Chinese Government declares that within the Province of Shantung and along its coast no territory or island will be ceded or leased to any Power under any pretext.

Article 3. The Chinese Government consents that as regards the railway to be built by China herself from Chefoo or Lungkow to connect with the Kiaochow-Tsinanfu railway, if Germany is willing to abandon the privilege of financing the Chefoo-Weihsien line, China will approach Japanese capitalists to negotiate for a loan.

Article 4. The Chinese Government engages, in the interest of trade and for the residence of foreigners, to open by China herself as soon as possible certain suitable places in the Province of Shantung as Commercial Ports.

(Supplementary Exchange of Notes)

The Places which ought to be opened are to be chosen, and the regulations are to be drafted, by the Chinese Government, but the Japanese Minister must be consulted before making a decision.

GROUP II

The Japanese Government and the Chinese Government, with a view to developing their economic relations in South Manchuria and Eastern Inner Mongolia, agree to the following articles:—

Article 1. The two contracting Powers mutually agree that the term of lease of Port Arthur and Dalny and the term of the South Manchuria Railway and the Antung-Mukden Railway, shall be extended to 99 years.

(Supplementary Exchange of Notes)

The term of lease of Port Arthur and Dalny shall expire in the 86th year of the Republic or 1997. The date for restoring the South Manchurian Railway to China shall fall due in the 91st year of the Republic or 2002. Article 12 in the original South Manchurian Railway Agreement that it may be redeemed by China after 36 years after the traffic is opened is hereby cancelled. The term of the Antung-Mukden Railway shall expire in the 96th year of the Republic or 2007.

Article 2. Japanese subjects in South Manchuria may lease or purchase the necessary land for erecting suitable buildings for trade and manufacture or for prosecuting agricultural enterprises.

Article 3. Japanese subjects shall be free to reside and travel in South Manchuria and to engage in business and manufacture of any kind whatsoever.

Article 3a. The Japanese subjects referred to in the preceding two articles, besides being required to register with the local authorities passports which they must procure under the existing regulations, shall also submit to police laws and ordinances and tax regulations, which are approved by the Japanese Consul. Civil and criminal cases in which the defendents are Japanese shall be tried and adjudicated by the Japanese Consul; those in which the defendents are Chinese shall be tried and adjudicated by Chinese Authorities. In either case an officer can be deputed to the court to attend the proceedings. But mixed civil cases between Chinese and Japanese relating to land shall be tried and adjudicated by delegates of both nations conjointly, in accordance with Chinese law and local usage. When the judicial system in the said region is completely reformed, all civil and criminal cases concerning Japanese subjects shall be tried entirely by Chinese law courts.

Article 4. (Changed to an exchange of notes.)

The Chinese Government agrees that Japanese subjects shall be permitted forthwith to investigate, select, and then prospect for and open mines at the following places in South Manchuria, apart from those mining areas in which mines are being prospected for or worked; until the Mining Ordinance is definitely settled, methods at present in force shall be followed.

Province of	Locality	District	Mineral
Feng-tien			
	Niu Hsin T'ai	Pen-hsi	Coal
	Tien Shih Fu Kou	Pen-hsi	do
	Sha Sung Kang	Hai-lung	do
	T'ieh Ch'ang	T'ung-hua	do
	Nuan Ti T'ang	Chin	do
	An Shan Chan region	From Liao-yang to Pen-hsi	Iron.
Kirin (Southern portion)			
	Sha Sung Kang	Ho-lung	C. & I.
	Kang Yao	Chi-lin (Kirin)	Coal
	Chia P'i Kou	Hua-tien	Gold

Article 5. (Changed to an exchange of notes.)

The Chinese Government declares that China will hereafter provide funds for building railways in South Manchuria; if foreign capital is required, the Chinese Government agrees to negotiate for a loan with Japanese Capitalists first.

Article 5a. (Changed to an exchange of notes.) The Chinese Government agrees that hereafter, when a foreign loan is to be made on the security of the taxes of South Manchuria (not including customs and salt revenue on the security of which loans have already been made by the Central Government), it will negotiate for the loan with Japanese capitalists first.

Article 6. (Changed to an exchange of notes.) The Chinese Government declares that hereafter if foreign advisers or instructors on political, financial, military or police matters are to be employed in South Manchuria, Jappanese will be employed first.

Article 7. The Chinese Government agrees speedily to make a fundamental revision of the Kirin-Changchun Railway Loan Agreement, taking as a standard the provisions in railway loan agreements made heretofore between China and foreign financiers. If, in future, more advantageous terms than those in existing railway loan agreements are granted to foreign financiers, in connection with railway loans, the above agreement shall again be revised in accordance with Japan's wishes.

CHINESE COUNTER-PROPOSAL TO ARTICLE 7

All existing treaties between China and Japan relating to Manchuria shall, except where otherwise provided for by this Convention, remain in force.

MATTERS RELATING TO EASTERN INNER MONGOLIA

1. The Chinese Government agrees that hereafter when a foreign loan is to be made on the security of the taxes of Eastern Inner Mongolia, China must negotiate with the Japanese Government first.

2. The Chinese Government agrees that China will herself provide funds for building the railways in Eastern Inner Mongolia; if foreign capital is required, she must negotiate with the Japanese Government first.

3. The Chinese Government agrees, in the interest of trade and for the residence of foreigners, to open by China herself, as soon as possible, certain places suitable in Eastern Inner Mongolia as Commercial Ports. The places which ought to be opened are to be chosen, and the regulations are to be drafted, by the Chinese Government, but the Japanese Minister must be consulted before making a decision.

4. In the event of Japanese and Chinese desiring jointly to undertake agricultural enterprises and industries incidental thereto, the Chinese Government shall give its permission.

GROUP III

The relations between Japan and the Hanyehping Company being very intimate, if the interested party of the said Company comes to an agreement with the Japanese capitalists for co-operation, the Chinese Government shall forthwith give its consent thereto. The Chinese Government further agrees that, without the consent of the Japanese capitalists, China will not convert the Company into a State enterprise, nor confiscate it, nor cause it to borrow and use foreign capital other than Japanese.

GROUP IV

China to give a pronouncement by herself in accordance with the following principle:—

No bay, harbour, or island along the coast of China may be ceded or leased to any Power.

NOTES TO BE EXCHANGED

A.

As regards the right of financing a railway from Wuchang to connect with the Kiukiang-Nanchang line, the Nanchang-Hangchow railway, and the Nanchang-Chaochow railway, if it is clearly ascertained that other Powers have no objection, China shall grant the said right to Japan.

B.

As regards the right of financing a railway from Wuchang to connect with the Kiukiang-Nanchang railway, a railway from Nanchang to Hangchow and another from Nanchang to Chaochow, the Chinese Government shall not *grant* the said right to any *foreign Power* before Japan comes to an understanding with the other Power which is heretofore *interested* therein.

NOTES TO BE EXCHANGED

The Chinese Government agrees that no nation whatever is to be permitted to construct on the coast of Fukien Province, a dock-yard, a coaling station for military use, or a naval base; nor to be authorised to set up any other military establishment. The Chinese Government further agrees not to use foreign capital for setting up the above-mentioned construction or establishment.

Mr. Lu, the Minister of Foreign Affairs, stated as follows:—

1. The Chinese Government shall, whenever, in future, it considers this step necessary, engage numerous Japanese advisers.
2. Whenever, in future, Japanese subjects desire to lease or purchase land in the interior of China for establishing schools or hospitals, the Chinese Government shall forthwith give its consent thereto.
3. When a suitable opportunity arises in future, the Chinese Government will send military officers to Japan to negotiate with Japanese military authorities the matter of purchasing arms or that of establishing a joint arsenal.

Mr. Hioki, the Japanese Minister, stated as follows:—

As relates to the question of the right of missionary propaganda, the same shall be taken up again for negotiation in future.

China's Memorandum to the Japanese Minister

MEMORANDUM READ BY THE MINISTER OF FOREIGN AFFAIRS TO MR. HIOKI, THE JAPANESE MINISTER, AT A CONFERENCE HELD AT WAICHIAOPU, MAY 1, 1915.

The list of demands which the Japanese Government first presented to the Chinese Government consists of five Groups, the first relating to Shantung, the second relating to South Manchuria and Eastern Inner Mongolia, the third relating to the Hanyehping Company, the fourth asking for non-alienation of the coast of the country, and the fifth relating to the questions of national advisers, national police, national arms, missionary propaganda, Yangtse Valley railways, and Fukien Province. Out of profound regard for the intentions entertained by Japan, the Chinese Government took these momentous demands into grave and careful consideration and decided to negotiate with the Japanese Government frankly and sincerely what were possible to negotiate. This is a manifestation to Japan of the most profound regard which the Chinese Government entertains for the relations between the two nations.

Ever since the opening of the negotiations China has been doing her best to hasten their progress, holding as many as three conferences a week. As regards the articles in the second group, the Chinese Government, being disposed to allow the Japanese Government to develop the economic relations of the two countries in South Manchuria, realizing that the Japanese Government attaches importance to its interests in that region, and wishing to meet the hopes of Japan, made a painful effort, without hesitation, to agree to the extension of the 25-year lease of Port Arthur and Dalny, the 36-year period of the South Manchuria railway and the 15-year period of the Antung-Mukden railway, all to 99 years; and to abandon its own cherished hopes to regain control of these places and properties at the expiration of their respective original terms of lease. It cannot but be admitted that this is a most genuine proof of China's friendship for Japan. As to the rights of opening mines in South Manchuria, the Chinese Government has already agreed to permit Japanese to work mines within the mining areas designated by Japan. China has further agreed to give Japan a right of preference in the event of borrowing foreign capital for building railways or of making a loan on the security of the local taxes in South Manchuria. The question of revising the arrangement for the Kirin-Changchun railway has been settled in accordance with the proposal made by Japan. The Chinese Government has further agreed to employ Japanese first in the event of employing foreign advisers on political, military, financial and police matters.

Furthermore, the provision about the repurchase period in the South Manchurian railway was not mentioned in Japan's original proposal. Subsequently, the Japanese Government alleging that its meaning was not clear, asked China to cancel the provision altogether. Again, Japan at first demanded the right of Japanese to carry on farming in South Manchuria, but subsequently she considered the word "farming" was not broad enough and asked to replace it with the phrase "agricultural enterprises." To these requests the Chinese Government, though well aware that the proposed changes could only benefit Japan, still acceded without delay. This, too, is a proof of China's frankness and sincerity toward Japan.

As regards matters relating to Shantung, the Chinese Government has agreed to a majority of the demands.

The question of inland residence in South Manchuria is, in the opinion of the Chinese Government, incompatible with the treaties China had entered into with Japan and other Powers, still the Chinese Government did its best to consider how it was possible to avoid that incompatibility. At first, China suggested that the Chinese Authorities should have full rights of jurisdiction over Japanese settlers. Japan declined to agree to it. Thereupon China reconsidered the question and revised her counter-proposal five or six times, each time making some definite concession, and went so far as to agree that all civil and criminal cases between Chinese and Japanese should be arranged according to existing treaties. Only cases relating to land or lease contracts were reserved to be adjudicated by Chinese Courts, as a mark of China's sovereignty over the region. This is another proof of China's readiness to concede as much as possible.

Eastern Inner Mongolia is not an enlightened region as yet and the conditions existing there are entirely different from those prevailing in South Manchuria. The two places, therefore, cannot be considered in the same light. Accordingly, China agreed to open commercial marts first, in the interests of foreign trade.

The Hanyehping Company mentioned in the third group is entirely a private company, and the Chinese Government is precluded from interfering with it and negotiating with another government to make any disposal of the same as the Government likes, but having regard for the interests of the Japanese capitalists, the Chinese Government agreed that whenever, in future, the said company and the Japanese capitalists should arrive at a satisfactory arrangement for co-operation, China will give her assent thereto. Thus the interests of the Japanese capitalists are amply safeguarded.

Although the demand in the fourth group asking for a declaration not to alienate China's coast is an infringement of her sovereign rights, yet the Chinese Government offered to make a voluntary pronouncement so far as it comports with China's sovereign rights. Thus, it is seen that the Chinese Government, in deference to the wishes of Japan, gave a most

serious consideration even to those demands which gravely affect the sovereignty and territorial rights of China as well as the principle of equal opportunity and the treaties with foreign Powers. All this was a painful effort on the part of the Chinese Government to meet the situation—a fact of which the Japanese Government must be aware.

As regards the demands in the fifth group, they all infringe China's sovereignty, the treaty rights of other Powers or the principle of equal opportunity. Although Japan did not indicate any difference between this group and the preceding four in the list which she presented to China in respect of their character, the Chinese Government, in view of their palpably objectionable features, persuaded itself that these could not have been intended by Japan as anything other than Japan's mere advice to China. Accordingly China has declared from the very beginning that while she entertains the most profound regard for Japan's wishes, she was unable to admit that any of these matters could be made the subject of an understanding with Japan. Much as she desired to pay regard to Japan's wishes, China cannot but respect her own sovereign rights and the existing treaties with other Powers. In order to be rid of the seed for future misunderstanding and to strengthen the basis of friendship, China was constrained to iterate the reasons for refusing to negotiate on any of the articles in the fifth group, yet in view of Japan's wishes China has expressed her readiness to state that no foreign money was borrowed to construct harbour works in Fukien Province. Thus it is clear that China went so far as to seek a solution for Japan of a question that really did not admit of negotiation. Was there, then, evasion on the part of China?

Now, since the Japanese Government has presented a revised list of demands and declared at the same time, that it will restore the leased territory of Kiaochow, the Chinese Government reconsiders the whole question and herewith submits a new reply to the friendly Japanese Government.

In this reply the unsettled articles in the first group are stated again for discussion. As regards the second group, those articles which have already been initialled are omitted. In connexion with the question of inland residence the police regulation clause has been revised in a more restrictive sense. As for the trial of cases relating to land and lease contracts the Chinese Government now permits the Japanese Consul to send an officer to attend the proceedings. Of the four demands in connexion with that part of Eastern Inner Mongolia which is within the jurisdiction of South Manchuria and the Jehol Intendency, China agrees to three. China, also, agrees to the article relating to the Hanyehping Company as revised by Japan.

It is hoped that the Japanese Government will appreciate the conciliatory spirit of the Chinese Government in making this final concession and forthwith give her assent thereto.

There is one more point. At the beginning of the present negotiations it was mutually agreed to observe secrecy but unfortunately a few days after the presentation of the demands by Japan an Osaka newspaper published an "Extra" giving the text of the demands. The foreign and the Chinese press has since been paying considerable attention to this question and frequently publishing pro-Chinese or pro-Japanese comments in order to call forth the world's conjecture—a matter which the Chinese Government deeply regrets. The Chinese Government has never carried on any newspaper campaign and the Chinese Minister of Foreign Affairs has repeatedly declared it to the Japanese Minister.

In conclusion, the Chinese Government wishes to express its hope that the negotiations now pending between the two countries will soon come to an end and whatever misgivings foreign countries entertain toward the present situation may be quickly dispelled.

China's Reply to Japan's Revised Demands

China's Reply of May 1, 1915, to the Japanese Revised Demands of April 26, 1915.

Group I

The Chinese Government and the Japanese Government, being desirous of maintaining the general peace in Eastern Asia and further strengthening the friendly relations and good neighborhood existing between the two nations, agree to the following articles:—

Article 1. The Chinese Government declare that they will give full assent to all matters upon which the Japanese and German Governments may hereafter mutually agree, relating to the disposition of all interests which Germany, by virtue of treaties or recorded cases, possesses in relation to the Province of Shantung.

The Japanese Government declares that when the Chinese Government give their assent to the disposition of interests above referred to, Japan will restore the leased territory of Kiaochow to China; and further recognize the right of the Chinese Government to participate in the negotiations referred to above between Japan and Germany.

Article 2. The Japanese Government consent to be responsible for the indemnification of all losses occasioned by Japan's military operation around the leased territory of Kiaochow. The customs, telegraphs and post offices within the leased territory of Kiaochow shall, prior to the restoration of the said leased territory to China, be administered as heretofore for the time being. The railways and telegraph lines erected by Japan for military purposes are to be removed forthwith. The Japanese troops now stationed outside the original leased teritory of Kiaochow are now to be withdrawn first, those within the original leased territory are to be withdrawn on the restoration of the said leased territory to China.

Article 3. (Changed into an exchange of notes) The Chinese Government declare that within the Province of Shantung and along its coast no territory or island will be ceded or leased to any Power under any pretext.

Article 4. The Chinese Government consent that as regards the railway to be built by China herself from Chefoo or Lungkow to connect with the Kiaochow-Tsinanfu railway, if Germany is willing to abandon the privilege of financing the Chefoo-Weihsien line, China will approach Japanese capitalists for a loan.

Article 5. The Chinese Government engage, in the interest of trade and for the residence of foreigners, to open by herself as soon as possible certain suitable places in the province of Shantung as Commercial Ports.

(Supplementary Exchange of Notes)

The places which ought to be opened are to be chosen, and the regulations are to be drafted, by the Chinese Government, but the Japanese Minister must be consulted before making a decision.

Article 6. If the Japanese and German Governments are not able to come to a definite agreement in future in their negotiations respecting transfer, etc, this provisional agreement contained in the foregoing articles shall be void.

Group II*

The Chinese Government and the Japanese Government, with a view to developing their economic relations in South Manchuria, agree to the following articles:—

Article 2. Japanese subjects in South Manchuria may, by arrangement with the owners, lease land required for erecting suitable buildings for trade and manufacture or for agricultural enterprises.

Article 3. Japanese subjects shall be free to reside and travel in South Manchuria and to engage in business and manufacture or any kind whatsoever.

Article 3a. The Japanese subjects referred to in the preceding two articles, besides being required to register with the local authorities passports, which they must procure under the existing regulations, shall also observe police rules and regulations and pay taxes in the same manner as Chinese. Civil and criminal cases shall be tried and adjudicated by the authorities of the defendent's nationality and an officer can be deputed to attend the proceedings. But all cases purely between Japanese subjects, and mixed cases between Japanese and Chinese, relating to land or disputes arising from lease contracts, shall be tried and adjudicated by Chinese Authorities and the Japanese Consul may also depute an officer to attend the proceedings. When the judicial system in the said Province is completely reformed, all the civil and criminal cases concerning Japanese subjects shall be tried entirely by Chinese law courts.

Relating to Eastern Inner Mongolia

(To be exchanged by Notes.)

Article 1. The Chinese Government declare that China will not in future pledge the taxes, other than customs and salt revenue, of that part of Eastern Inner Mongolia under the jurisdiction of South Manchuria and Jehol Intendency, as security for raising loans.

Article 2. The Chinese Government declare that China will herself provide funds for building the railways in that part of Eastern Inner Mongolia under the jurisdiction of South Manchuria and the Jehol Intendency; if foreign capital is required, China will negotiate with Japanese capitalists first, provided this does not conflict with agreements already concluded with other Powers.

Article 3. The Chinese Government agrees, in the interest of trade and for the residence of foreigners, to open by China herself certain suitable places in that part of Eastern Inner Mongolia under the jurisdiction of South Manchuria and the Jehol Intendency, as Commercial Marts.

The regulations for the said Commercial Marts will be made in accordance with those of other Commercial Marts opened by China herself.

Group III

The relations between Japan and the Hanyehping Company being very intimate, if the said Company comes to an agreement with the Japanese capitalists for co-operation, the Chinese Government shall forthwith give their consent thereto. The Chinese Government further declare that China will not convert the Company into a state enterprise, nor confiscate it, nor cause it to borrow and use foreign capital other than Japanese.

Letter to be addressed by the Japanese Minister to the Chinese Minister of Foreign Affairs.

Excellency:

I have the honor to state that a report has

*The six articles which are found in Japan's Revised Demands of April 26, 1915, but omitted herein are those already initialled by the Chinese Foreign Minister and the Japanese Minister.

reached me that the Chinese Government have given permission to foreign nations to construct, on the coast of Fukien Province, dock yards, coaling stations for military use, naval bases and other establishments for military purposes, and further that the Chinese Government are borrowing foreign capital for putting up the above-mentioned construction or establishments. I shall be much obliged, if the Chinese Government will inform me whether or not these reports are well founded in fact.

REPLY TO BE ADDRESSED BY THE CHINESE MINISTER OF FOREIGN AFFAIRS TO THE JAPANESE MINISTER.

Excellency:

I have the honor to acknowledge the receipt of your Excellency's Note of............In reply I beg to state that the Chinese Government have not given permission to foreign Powers to construct, on the coast of Fukien Province, dock yards, coaling stations for military use, naval bases or other establishments for military purposes; nor do they contemplate borrowing foreign capital for putting up such constructions or establishments.

Japan's Ultimatum

ULTIMATUM DELIVERED BY JAPANESE MINISTER TO MINISTER OF FOREIGN AFFAIRS AT 3 O'CLOCK P.M. ON MAY 7TH, 1915

The reason why the Imperial Government opened the present negotiations with the Chinese Government is first to endeavour to dispose of the complications arising out of the war between Japan and Germany, and secondly to attempt to solve various questions which are detrimental to the intimate relations of China and Japan with a view to solidifying the foundation of cordial friendship subsisting between the two countries to the end that the peace of the Far East may be effectually and permanently preserved. With this object in view, definite proposals were presented to the Chinese Government in January of this year, and up to to-day as many as twenty-five conferences were held with the Chinese Government in perfect sincerity and frankness.

In the course of the negotiation the Imperial Government has consistently explained the aims and objects of the proposals in a conciliatory spirit, while on the other hand the proposals of the Chinese Government, whether important or unimportant, have been attended to without any reserve.

It may be stated with confidence that no effort has been spared to arrive at a satisfactory and amicable settlement of those questions.

The discussion of the entire corpus of the proposals was practically at an end at the twenty-fourth conference: that is, on 17th of the last month. The Imperial Government, taking a broad view of the negotiation and in consideration of the points raised by the Chinese Government, modified the original proposals with considerable concessions and presented to the Chinese Government on the 26th of the same month the revised proposals for agreement, and at the same time it was offered that, on the acceptance of the revised proposals, the Imperial Government would, at a suitable opportunity, restore, with fair and proper conditions, to the Chinese Government the Kiaochow territory, in the acquisition of which the Imperial Government had made a great sacrifice.

On the 1st of May, the Chinese Government delivered the reply to the revised proposals of the Japanese Government, which is contrary to the expectations of the Imperial Government. The Chinese Government not only did not give a careful consideration to the revised proposals, but even with regard to the offer of the Japanese Government, to restore Kiaochow to the Chinese Government, the latter did not manifest the least appreciation of Japan's good will and difficulties.

From the commercial and military points of view Kiaochow is an important place, in the acquisition of which the Japanese Empire sacrificed much blood and money, and, after the acquisition, the Empire incurs no obligation to restore it to China. But with the object of increasing the future friendly relations of the two countries, she went to the extent of proposing its restoration, yet to her great regret, the Chinese Government did not take into consideration the good intention of Japan and manifest appreciation of her difficulties. Furthermore, the Chinese Government not only ignored the friendly feelings of the Imperial Government offering the restoration of Kiaochow Bay, but also in replying to the revised proposals they even demanded its unconditional restoration; and again China demanded that Japan should bear the responsibility of paying indemnity for all the unavoidable losses and damages resulting from Japan's military operations at Kiaochow; and still further in connection with the territory of Kiaochow China advanced other demands and declared that she has the right of participation at the future peace conference to be held between Japan and Germany. Although China is fully aware that the unconditional restoration of Kiaochow and Japan's responsibility of indemnification for the unavoidable losses and damages can never be tolerated by Japan, yet she purposely advanced these demands and declared that this reply was final and decisive.

Since Japan could not tolerate such demands, the settlement of the other question, however compromising it may be, would not be to her interest. The consequence is that the present reply of the Chinese Government is, on the whole, vague and meaningless.

Furthermore, in the reply of the Chinese Government to the other proposals in the revised list of the Imperial Government, such as South Manchuria and Eastern Inner Mongolia, where Japan particularly has geographical, political, commercial, industrial and strategic relations, as recognised by all the nations, and made more remarkable in consequence of the two wars in which Japan was engaged, the Chinese Government overlooks these facts and does not respect Japan's position in that place. The Chinese Government even freely altered those articles which the Imperial Government, in a compromising spirit, have formulated in accordance with the statement of the Chinese Representatives thereby making the statements of the Representatives an empty talk; or on seeing them conceding with the one hand and withholding with the other, it is very difficult to attribute faithfulness and sincerity to the Chinese Authorities.

As regards the articles relating to the employment of advisers, the establishment of schools and hospitals, the supply of arms and ammunition and the establishment of arsenals, and railway concessions in South China in the revised proposals, they are either proposed with the proviso that the consent of the Power concerned must first be obtained, or they are merely to be recorded in the minutes in accordance with the statements of the Chinese delegates, and thus they are not in the least in conflict either with Chinese sovereignty or her treaties with the Foreign Powers. Yet the Chinese Government in their reply to the proposals, alleging that these proposals are incompatible with their sovereign rights and the Treaties with the Foreign Powers, defeat the expectations of the Imperial Government. In spite of such attitude of the Chinese Government, the Imperial Government, though regretting to see that there is no room for further negotiation, yet warmly attached to the preservation of the peace of the Far East, is still hoping for a satisfactory settlement in order to avoid the disturbance of the relations.

So in spite of the circumstances which admitted no patience, they have reconsidered the feelings of the Government of their neighbouring country and with the exception of the article relating to Fukien, which is to be the subject of an exchange of notes as has already been agreed upon by the Representatives of both nations, will undertake to detach the Group V. from the present negotiations and discuss it separately in the future. Therefore the Chinese Government should appreciate the friendly feelings of the Imperial Government by immediately accepting without any alteration all the articles of Groups I, II, III, and IV and the exchange of notes in connection with Fukien Province in Group V. as contained in the revised proposals presented on the 26th of April.

The Imperial Government hereby again offer their advice and hope that the Chinese Government upon this advice will give a satisfactory reply by 6 o'clock p.m. on the 9th day of May. It is hereby declared that if no satisfactory reply is received before or at the designated time, the Imperial Government will take steps they may deem necessary.

Japan's Explanatory Note

EXPLANATORY NOTE ACCOMPANYING MEMORANDUM DELIVERED TO THE MINISTER OF FOREIGN AFFAIRS BY THE JAPANESE MINISTER THE SEVENTH DAY OF MAY, 1915.

1. With the exception of the question of Fukien to be arranged by an exchange of notes, the five articles postponed for later negotiation refer to (a) the employment of advisers, (b) the establishment of schools and hospitals, (c) the railway concessions in South China, (d) the supply of arms and ammunition and the establishment of arsenals (e) the propagation of Buddhism.

2. The acceptance by the Chinese Government of the article relating to Fukien may be either in the form as proposed by the Minister of Japan on the 26th of April or in that contained in the Reply of the Chinese Government of May 1st. Although the Ultimatum calls for the immediate acceptance by China of the modified proposals presented on April 26th, without alteration, but it should be noted that it merely states the principle and does not apply to this article and articles 4 and 5 of this note.

3. If the Chinese Government accept all the articles as demanded in the Ultimatum the offer of the Japanese Government to restore Kiaochow to China made on the 26th of April, will still hold good.

4. Article 2 of Group II relating to the lease or purchase of land, the terms "lease" and "purchase" may be replaced by these terms, "temporary lease" and "perpetual lease" or "lease on consultations," which means a long-term lease with its unconditional renewal.

Article 4 of Group II relating to the approval of laws and ordinances and local taxes by the Chinese Consul may form the subject of a secret agreement.

5. The phrase "to consult with the Japanese Government" in connection with questions of pledging the local taxes for raising loans and the loans for construction of railways, in Eastern Inner Mongolia, which is similar to the agreement in Manchuria relating to the matters of the same kind, may be replaced by the phrase "to consult with the Japanese capitalists."

The article relating to the opening of trade marts in Eastern Inner Mongolia in respect to location and regulations, may, following the precedent set in Shantung, be the subject of an exchange of notes.

6. From the phrase "those interested in the Company" in Group III of the revised list of demands, the words "those interested in" may be deleted.

7. The Japanese version of the Formal Agreement and its annexes shall be the official text or both the Chinese and Japanese shall be official texts.

China's Reply to the Ultimatum

THE REPLY OF THE CHINESE GOVERNMENT TO THE ULTIMATUM OF THE JAPANESE GOVERNMENT, DELIVERED TO THE JAPANESE MINISTER BY THE MINISTER OF FOREIGN AFFAIRS ON THE 8TH OF MAY, 1915.

On the 7th of this month, at three o'clock p.m., the Chinese Government received an

Ultimatum from the Japanese Government together with an Explanatory Note of seven articles. The Ultimatum concluded with the hope that the Chinese Government up to 6 o'clock p.m. on the 9th of May, will give a satisfactory reply, and it is hereby declared that if no satisfactory reply is received before or at the designated time, the Japanese Government will take steps she may deem necessary.

The Chinese Government with a view to preserving the peace of the Far East, hereby accepts, with the exception of those five articles of Group V. postponed for later negotiation, all the articles of Groups I, II, III, and IV and the exchange of Notes in connection with Fukien Province in Group V. as contained in the revised proposals presented on the 26th of April and in accordance with the Explanatory Note of seven articles accompanying the Ultimatum of the Japanese Government with the hope that thereby all outstanding questions are settled, so that the cordial relationship between the two countries may be further consolidated. The Japanese Minister is hereby requested to appoint a day to call at the Ministry of Foreign Affairs to make the literary improvement of the text and sign the Agreement as soon as possible.

JAPAN'S COMMUNIQUE

Issued by the Japanese Government from Tokio on May 7 and circulated by Reuter's Telegraph Agency

The Imperial Government have, in the demands lately presented to the Chinese Government, made it the main object to adjust matters to meet the new situation created by the war between Japan and Germany and to bring closer the friendly relations subsisting between Japan and China and thus ensure the permanent peace of the Far East. In formulating these demands, they have taken special care to avoid those which might have been deemed to conflict with the principles of territorial integrity, equal opportunity and the open door, which Japan has, from time to time, declared to the Powers in regard to China. Accordingly these demands include among others those relating to the disposition of German rights in Shantung, those relating to the recognition of the special position and interests of Japan in South Manchuria and Eastern Inner Mongolia, and those relating to the solution of various questions which for many years, have been pending between the Japanese and Chinese Governments.

Group I contains demands relating to the Province of Shantung.

The first article demands an engagement on the part of China to consent to all matters which may be agreed upon between the Japanese Government and the German Government with regard to the disposition of all rights, interests and concessions which in virtue of treaties or otherwise Germany possesses in relation to the Province of Shantung.

The second article demands an engagement on the part of China not to alienate or lease to another Power the province of Shantung or any portion of it or any island lying near the coast of the said Province.

Article 3. China shall grant to Japan the right of construction of a railway connecting Chefoo or Lungkou with the Tsinanfu-Kiaochau Railway.

Article 4. The Chinese Government shall open the principal cities of the province of Shantung for the residence and trade of foreigners.

Group II. Contains demands relating to South Manchuria and Eastern Inner Mongolia. The first article demands the extension of the terms of lease of Port Arthur and of the South Manchuria and Antung-Mukden Railways to a period of ninety-nine years. The second article demands that Japanese subjects shall be permitted to lease or own land necessary either for erecting buildings of various kinds for commercial and industrial uses or for agricultural purposes. The third article demands that Japanese subjects shall be permitted to reside, travel and carry on business of various kinds, commercial, industrial or otherwise. The fourth article demands that Japanese subjects shall be granted the mining rights of certain specified mines. The fifth article demands that the consent of the Japanese Government shall be obtained in advance when China proposed to grant a railway concession to subjects of a third power or to procure a supply of capital from a third power for the construction of a railway or to raise a loan from such power on the security of duties or taxes. The sixth article demands that the Japanese Government shall be consulted before the engaging of advisers or instructors regarding political, financial or military matters. Article seven demands that the management and control of the Kirin-Changchun Railway shall be transferred to Japan for the term of ninety-nine years.

Group III. Contains demands relating to the Hanyehping Company. The first article demands that having regard to the close relations between Japanese capitalists and this Company, the Chinese Government shall agree to the placing of the Company under joint Japanese and Chinese management and not to dispose or permit the Company to dispose, without the consent of Japan, any rights or property belonging to the Company. The second article demands that owing to the necessity for the protection of the interests of Japanese capitalists, the Chinese Government shall engage not to permit, without the consent of the Company, any one other than the Company to work mines situated in the neighborhood of those belonging to the Company and also to obtain previous consent in case it is proposed to take measures which may be deemed to affect the Company directly or indirectly.

Group IV. Contains demands relating to the non-alienation of the coast of China or islands off the coast. The Chinese Government shall engage not to alienate or lease to a third Power any ports or bays on, or islands off, the coast of China.

Group V. Propositions relating to the solution of pending questions and others.

Article 1. The Central Chinese Government must engage influential Japanese as political, financial and military advisers.

Article 2. The Chinese Government must recognise the right of Japanese to land for building Japanese hospitals, temples and schools in the interior of China.

Article 3. The police in localities where such arrangements are necessary must be placed under joint Japanese and Chinese administration, or else Japanese must be employed as police officers in such localities.

Article 4. China must obtain from Japan a supply of a certain quantity of arms, or else must establish arsenals in China, under joint Japanese and Chinese management, and these must be supplied with experts and material from Japan.

Article 5. Japan must be given the right to construct a railway connecting Wuchang with the Kiukiang-Nanchang line and with the Nanchang-Hangchow railways.

Article 6. In view of the relations between the province of Fukien and Formosa and the agreement respecting the non-alienation of Fukien, Japan must be consulted whenever foreign capital is needed in connection with railways, mines and harbor works, including dockyards.

Article 7. The Chinese Government must recognise the right of preaching by the Japanese in China.

With regard to the province of Shantung, China absolutely lacks, it is clear, in her present condition, the power to prevent Germany from recovering her influence in that province and from becoming in future again a source of disturbance in the Far East. It is, therefore, natural that Japan, who has at great sacrifice driven Germany out of Shantung, should present the above-mentioned demands, in order to consider how the rights possessed by Germany should be disposed of, and to take measures to prevent the recrudescence of German influence.

Japan's relations with Manchuria have always been especially close geographically, politically and from the point of view of commercial and industrial interests. Since those relations have been strengthened by two successive wars the predominant position of Japan in that region has been recognised both at home and abroad.

The case is almost similar in regard to Eastern Inner Mongolia.

Further for the advancement of the intimate relations existing between Japan and China, no effort should be spared to solve definitely on this occasion all pending questions which are likely to lead to difficulties with China and at the same time to make an agreement with a view to prevent future misunderstandings. The Japanese Government, fully expecting that the Chinese Government would value the friendly sentiments existing between the two countries and willingly accede to the Japanese proposals, urged them to carry these matters into effect, whereas, in other matters China's consent was demanded by reason of treaty and other rights.

With regard to the demands, which were formulated after careful and mature consideration, on the basis of the principles above referred to, the Chinese Government, in disregard of the understanding which was made at the commencement of the negotiations to keep the proceedings of the conferences strictly secret, made public the Japanese proposals, in various exaggerated forms and endeavored to stir up the feelings of the Powers against Japan. They caused the matters discussed at the conferences to be published invariably in the newspapers, with a view to hindering the progress of the negotiations; by fabricating news detrimental to Japan and they attempted to shake the confidence placed by her ally in Japan. They even demanded the unconditional retrocession of Kiaochow and an indemnity for the damage caused by the war between Japan and Germany, and thus they showed from the first a lack of a sincere desire for a satisfactory conclusion of the negotiations. Moreover, although the Japanese Government fully showed its sincerity by repeatedly explaining the motives of the demands and endeavored to hear China's unreserved views on the matter, it is an undeniable fact that the Chinese authorities failed to appreciate the friendly attitude of Japan and persisted in protracting the negotiations. Twenty-five conferences were held in all, extending over more than three months and throughout these conferences the Japanese Government exhausted every means of arriving at a satisfactory solution, but the Chinese Government, although they showed a disposition to agree to the demands relating to the province of Shantung, yet with regard to South Manchuria put various restrictions upon the most important demands, namely those relating to the rights regarding land tenure and objected to those relating to Eastern Inner Mongolia and various questions enumerated under Group V. on the ground that they were derogatory to the sovereign rights of China or conflicted with treaties with other Powers and, although the Japanese Minister explained that such was not the case, they refused to listen. But, recognising that a satisfactory conclusion of the negotiations was most important for the maintenance of peace of the Far East, the Japanese Government treated the Chinese contentions with every consideration, making very great concessions. In a spirit of conciliation they amended their proposals and presented their revised draft to the Chinese Government on April 26. In the revised draft the contentions put forward by the Chinese Government were taken into consideration. In this draft, as regards Eastern Inner Mongolia,

the demands were confined, for the present, to absolutely necessary matters; those relating to the Hanyehping Company were confined to matters which had been admitted by the Chinese Government at the conferences. As regards the demand respecting the non-alienation of the coast, the form desired by the Chinese was accepted. The proposals relating to advisers, ownership of land for schools and hospitals, and the position of the province of Fukien were all altered in accordance with the views expressed by the Chinese representatives at the conferences. As regards South China railways, the relations with third parties especially were respected and alterations were made accordingly. The question of the right of preaching was reserved for future negotiation. Those relating to police and the ownership of sites for temples were withdrawn.

More Articles Added In Revised Draft

The revised draft is therefore practically as follows:—

Group II. Eastern Inner Mongolia is excluded from the proposals respecting South Manchuria and Eastern Inner Mongolia and the second and third articles are amended as follows:

Article 2. Japanese subjects shall be permitted in the region of South Manchuria to lease or buy land necessary for erecting buildings of various kinds for commercial and industrial uses or for agricultural purposes.

Article 3. Japanese subjects shall have liberty to enter, travel and reside in the region of South Manchuria and carry on business of various kinds, commercial, and industrial, and otherwise.

The fourth article, referring to the preceding two provisions, says that Japanese subjects shall produce before the Chinese local authorities passports duly issued and registered by the said authorities. They shall also observe Chinese police laws or regulations approved by the Japanese consuls and pay to the Chinese authorities taxes approved by the Japanese consuls. In civil, original suits the Japanese consul, where a Japanese subject is defendant, and a Chinese official, where a Chinese is defendant, shall respectively try and decide the case, both the Japanese consul and the Chinese official being permitted each to send an authorized agent to attend the trial and watch proceedings, provided that in a civil suit concerning land between Japanese and Chinese the case shall be examined and decided jointly by the Japanese consul and a Chinese official according to the laws and local customs of China, provided further that in future when the judicial system in the said region shall be completely reformed all civil and criminal suits involving Japanese subjects shall be wholly tried and decided by Chinese courts.

Proposals relating to Eastern Inner Mongolia:—

The first article demands that China shall permit joint enterprises of Japanese and Chinese in agricultural and auxiliary industries, the second that China shall consult Japan first in case China contemplates contracting either railway loans or loans secured by taxes, and the third that China shall increase the number of open marts.

Group III. As regards the Hanyehping Company the Chinese Government shall engage to approve of an agreement that may be concluded in future between the Company and Japanese capitalists for a joint undertaking, and agrees not to confiscate it nor to nationalise it without the consent of interested Japanese capitalists and not to permit it to contract any foreign loan with other than Japanese

Group IV. As regards the non-alienation of Chinese coasts, the Japanese Government will be satisfied with the declaration as suggested by the Chinese Government.

Group V. As to the other points the following shall be kept on record:

Article 1. That the Chinese Government will in case of necessity in future employ Japanese advisers.

Article 2. In case Japanese subjects desire to lease or purchase land for the purpose of building schools or hospitals in the interior, the Chinese Government will permit them to do so.

Article 2. The Chinese Government will some day in the future send military officers to Japan in order to make arrangements directly with the Japanese military authorities either for the purchase of arms from Japan or for establishing an arsenal [? arsenals] in China under Sino-Japanese management.

Article 4. The Chinese Government will grant Japan her desired railway concession in South China in case it becomes clear that there is no objection in this respect on the part of any other Power, or that the Chinese Government will refrain from entering into any agreement with any other party concerning the railway lines in question until Japan may, independently of the present negotiations with China, reach an agreement with the party whose interests, in the opinion of the Chinese Government, are opposed to the proposed lines.

Article 5. The question of freedom for preaching by Japanese missionaries will be left over for future discussion.

The proposal for joint administration of police is withdrawn.

As to Fukien province the Chinese Government must engage in some form that they will not grant to any other power the right to build a shipyard, coaling or naval stations, or any other military establishment on or along the coast of Fukien province, and further, that the Chinese Government will not allow any such establishment to be built with any foreign capital on the coast of the said province.

At the same time as the presentation of the revised draft, the Japanese Government declared to the Chinese Government that if, at any peace conference upon the conclusion of the present war, Japan should be given the free disposal of Kiaochow which she acquired at enormous sacrifice, she would return it to China subject to certain conditions, of which the principal ones were as follows:

The opening of Kiaochow Bay as a commercial port.

The establishment of a Japanese concession in a locality designated by the Japanese.

The establishment, if required by the Powers, of an international settlement and arrangements between the Japanese and Chinese Governments regarding the disposal of the German public structures and properties.

Germany having after many years labour and heavy expenditure of money converted Kiaochow into an important military and commercial port, as the basis of her expansion in the East, German influence in this part of China grew with the development of Kiaochow and became so firmly established that it was utterly hopeless for China, singlehanded, to regain possession of the leased territory. Japan, desiring to remove this source of danger, which might in future again disturb the peace of the Far East, captured it at no small cost of life and money, and now that it is in her hands, she is almost at liberty to dispose of it at will. She is certainly under no obligation to return it to China, but she offered of her own will to return Kiaochow because she was anxious to promote friendly relations with China and to maintain the general peace of the FarEast The Chinese Government have, however, failed to reciprocate Japan's sentiment of accommodation and conciliation, and on May 1, presented a counter-draft which they declared to be their final answer.

In this counter-draft, the Chinese Government recognise with regard to South Manchuria the right of residence, trade and leasing land by Japanese subjects in the interior, but refuse to grant long leases.

The Chinese Government also demand that Japanese subjects shall submit to Chinese police laws and regulations, be liable to the same taxes and duties as Chinese, and all actions arising out of land disputes, whether between Japanese and Chinese, or between Japanese themselves, shall come under the jurisdiction of Chinese courts.

As regards Eastern Inner Mongolia, they put limitations on the extent of that region and refuse to permit the main point of the Japanese demand, which is the joint enterprise of Japanese and Chinese in agriculture and auxiliary industries.

Further they demand at the same time the unconditional surrender of the leased territory at Kiaochow, and the recognition of the right of the Chinese Government to participate in the coming peace negotiations between Japan and Germany.

Indemnification by Japan for all losses suffered by China in consequence of the Japan-German war.

The immediate removal of various military establishments of the Japanese army and the prompt evacuation of occupied territory.

They also refused all the proposals contained in Group V. of the Japanese amended project except that relating to Fukien. In this counter-draft the Chinese Government, still further in disregard of responsible statements made by their representatives at the conferences, revived in some cases articles which had already been withdrawn and in others made alterations in matters which were agreed to. Moreover, they make demands to which it is clearly impossible for Japan to accede, such as those for the unconditional surrender of Kiaochow and indemnification for losses incurred through the Japan-German war. Furthermore, the Chinese Government declare that their counter-draft formulates their final decision. Accordingly, so long as Japan, refuses to accede to these demands whatever agreement may have been arrived at on other points must ultimately be abortive and the terms offered by China prove illusory. The Japanese Government deeply regret to perceive from the attitude of the Chinese Government that it is no longer any use to continue the present negotiations. Nevertheless, being desirous, with a view to the maintenance of peace in the Far East, to make every effort to bring the negotiations to a satisfactory conclusion and thus to avoid complications in the situation, the Japanese Government, taking fully into account the wishes of the Chinese Government, decided with great forbearance, to leave out of the present negotiations and reserve for future discussion all items specified in Group V. of the amended draft, except that relating to Fukien, about which an agreement has been reached. The Japanese Government instructed their Minister at Peking on May 6th that, in conveying this decision to the Chinese Government he should earnestly advise them to give due regard to Japan's sentiment of accommodation and conciliation and express after careful consideration their assent without delay to the Japanese amended draft and at the same time announce that the Japanese Government expect from the Chinese Government a satisfactory response to this advice not later than six p.m. on 9th May.

THE CONFERENCES OVER JAPAN'S DEMANDS.

In the last issue of the FAR EASTERN REVIEW we brought our record of the Conferences held between the Japanese Minister at Peking (Mr Eki Hioki) and the Chinese Minister of Foreign Affairs (Mr Lu Cheng-hsiang) up to April 17, which was the Twenty-fourth Conference.

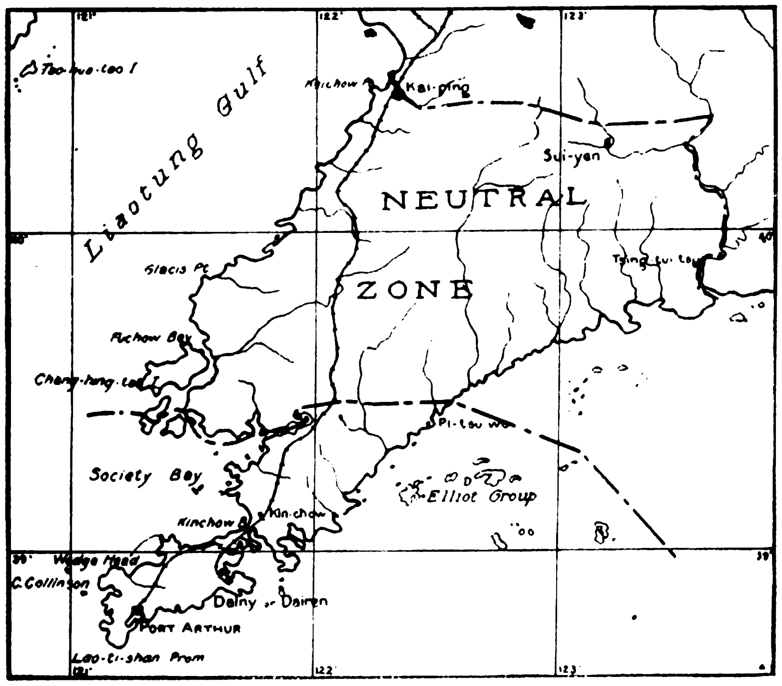
Twenty-fifth Conference.

On April 26, after the Conferences had been suspended by the Japanese Minister, a resumption took place, Mr Hioki this time presenting to the Chinese Foreign Minister what he described as a revised draft of the demands (published in this issue as one of the documents attached to the official statement of the Chinese Government) stating that he was acting under the instructions of the Japanese Government. This revised list contained twenty-four articles. Mr Hioki said that newspapers had been saying that the progress of the negotiations would be retarded on account of the suspension of the conferences, but in his opinion the suspension had resulted in a revised draft having been made by the Japanese Government, which was a great concession on the part of Japan. He entered into an explanation of the document and said that if the Chinese Government could agree to the revised draft in its entirety the Japanese Government would return the leased territory of Kiaochow to China, but the date of retrocession must be after the conclusion of the war between Japan and Germany, when Japan would be free to dispose of the territory. The retrocession would, however, be made under certain conditions: (1) That China should open Tsingtao as a commercial port and undertake not to use it as a naval base; (2) that Japan should establish a Japanese Settlement in Tsingtao under the exclusive jurisdiction of Japan; (3) that other Powers should also be allowed to establish Settlements according to their wishes, and (4) that the establishments and installations which Germany had erected in Tsingtao, such as forts, etc., should be disposed of before the retrocession of Tsingtao in a manner mutually to be decided upon by Japan and China. Mr Hioki then read a lengthy Note from his Government in which Japan charged the Chinese Government with wilful evasion of the points to which Japan attached the greatest importance, such as the question of settlement in South Manchuria, the question of Eastern Inner Mongolia and the Fukien question. Being desirous of maintaining the peace of the Far East, said Mr Hioki, Japan had revised her demands and wished to ask the Chinese Government to give their consent to them; should they do so then Japan would restore the Kiaochow territory. In this Note the Japanese Government made another protest against the Chinese Government for resorting to a newspaper campaign. On account of this, added Mr Hioki, the Japanese Government was greatly displeased. The Chinese Foreign Minister replied that he would take the revised list of demands into very careful consideration, but said that he could not admit the allegation made by the Japanese Government that China had in any way been trying to avoid the important questions. In the course of more than twenty conferences China had conceded whatever it was possible for her to concede without infringing her sovereignty, the Treaty rights of other Powers, and the principle of equal opportunity. In some respects China had conceded the demands of Japan textually. Mr Hioki said that since the revised list was not a new set of demands and since all the necessary discussion had already taken place he expected that the Chinese Government would not need much time to consider their views on the draft. The Chinese Foreign Minister pointed out that the earliest date when a reply could be given would be April 29. He also said he wished to make the observation that as regards the Fifth Group it was out of regard for Mr Hioki's wishes that he had consented to give his reasons why he could not discuss them. He, therefore, deeply regretted that the Japanese Government had seen fit to insert his alleged statements in this revised draft. Mr Hioki replied that to record a statement was not to record an understanding. The Foreign Minister replied that he had never consented that any statements of this nature, even if correctly quoted, should be recorded. The Foreign Minister asked Mr Hioki what he considered the limits of the so-called Eastern Inner Mongolia, to which question Mr Hioki replied that he would telegraph his Government to inquire. The Foreign Minister added that it could only mean the territory adjoining South Manchuria. The parts adjoining North Manchuria or Chihli Province could not be included.

Twenty-sixth Conference.

On May 1 the next and last conference in connexion with the demands was held. The Chinese Foreign Minister gave the reply (reproduced in this issue) of the Chinese Government to the revised demands, accompanied by a Note (also reproduced in this issue) outlining the past conferences and the concessions which China had made, and also expressing the hope that the Japanese Government would find the Chinese reply acceptable. Mr Hioki said that as regards the Chinese supplementary proposal in respect of the return of Kiaochow in the first Group he thought that had been dropped already. The Chinese Foreign Minister said that it had never been dropped, but in deference to Mr Hioki's wishes the discussion had been postponed. Mr Hioki said that so far as the restoration of the telegraphs and post offices to China were concerned that would be settled at the time of the restoration of Kiaochow to China, as the question could not be taken up before then. The question of the Customs could be taken up at another time. With regard to the request for an indemnity, said Mr Hioki, the Japanese Government was determined not to make any compensation for the losses arising out of their operations in Shantung. According to international law, he added, China had no right to expect compensation. The Chinese Foreign Minister pointed out that Japan was not at war with China. Whereas in ordinary cases countries at war would fight in their own or in their enemy's territory, in this case Japan was fighting in the territory of a neutral, friendly Power. He explained that the indemnity referred to in China's supplementary proposal was meant to cover those losses which had occurred west of Weihsien, and added that since the Shantung questions were connected with the post bellum settlement the best way of dealing with them would be to postpone them until after the war. Mr. Hioki said that he had heard that remark many times before. His Government could not admit that the questions should be postponed until after the war. With regard to Japan's contentions respecting the South Manchurian question the Chinese Foreign Minister said that the police rules and regulations had been in force for many years and had been drafted by a Japanese Doctor of Laws. China therefore did not see the necessity of submitting them to the Japanese Government for approval. So far as taxation was concerned Japanese subjects would be treated in the same way as Chinese; there would be no other taxes imposed on Japanese. Mr. Hioki said he expected that the reply of China to the revised demands would have been very satisfactory, but seeing what it was he could not help expressing his disappointment. All he could do would be to report it to his Government. The Chinese Foreign Minister pointed out that with regard to Eastern Inner Mongolia the Chinese Government had done their best to agree to three out of the four new demands presented by Japan. Speaking with regard to the demands for railways South of the Yangtsze the Chinese Foreign Minister said that China could not accept the first proposal as it conflicted with definite agreements already concluded with another Power. With regard to the second demand he wished to know if the phrase "another Power" included Great Britain. Mr. Hioki replied that in his opinion Great Britain was included. He said that he had explained that in reality the proposed line from Nanchang to Chaochow had nothing to do with those granted to Great Britain, especially as Japan intended to survey that line to take it into Fukien Province. The Foreign Minister replied that since the terminals of the two lines were the same he thought the construction of a Japanese line would cause undue competition and impair the interests of the line granted to Great Britain. Mr. Hioki declared that a mountain divided the two lines and so far as he knew the British line from Nanchang to Canton would not pay, and unless the two lines were built the British line

would be a losing proposition. A Chinese delegate thereupon remarked that the proposal of another line was all right from Japan's point of view but as China had to repay the money borrowed for construction it would be extravagance for China to duplicate the British line; it would be more desirable to spend the money that another line would cost in a region where a railway would be more serviceable. Mr. Hioki admitted the soundness of the contention, but repeated that in order to make the British line pay the Japanese one was necessary. Mr. Hioki asked what of the four articles in the Fifth Group. The Foreign Minister replied that he had stated at the outset of the conferences that he could not discuss them, and that it was only out of respect for Mr. Hioki that he had even given the reasons why they could not be discussed. As his reasons had been taken as definite statements he was disappointed and he thought the least said about the matter the better lest there should be more



LEASED TERRITORY IN LIAOTUNG PENINSULA, INCLUDING NEUTRAL ZONE

misunderstanding. Mr. Hioki said he was disappointed to hear what the Foreign Minister had said, and he was sure his Government would also be disappointed. He referred to his declaration regarding the restoration, and said that it had been made on the condition that China would accept the twenty-four demands as a whole. Now that the Chinese Government had declined to do so he must withdraw his declaration. He then asked if he could report to his Government that this reply of the Chinese Government was really the result of final revision. The Foreign Minister said that what China could considered in the reply and therefore it was the result of final revision on the part of the Chinese Government. He hoped that the Japanese Government would see the difficulties of the Chinese Government and accept the reply in order to come to an early decision on the whole question. Mr. Hioki said he doubted if his Government would accept it.

Drafting the Treaty.

As the Japanese Minister surmised, his Government did not accept the Chinese reply to Japan's revised demands, and on May 7 an Ultimatum (republished in this issue) was delivered to the Chinese Government. It was accepted on May 10 at 1.30 o'clock in the morning. The demands thus accepted under *force majeure* had, however, to be embodied in a Treaty between China and Japan, and on May 15 the first conference for this purpose was held. The Japanese Minister produced a draft Treaty which he submitted, with a request for certain understandings. One was that the lease of Port Arthur and Dalny should be written in the Treaty as of the*"Liaotung Peninsula." Another was that the Shantung demands should become operative when the Treaty was signed, and a third was that those questions in connexion with which an exchange of notes was demanded should be definite when embodied in the Treaty. The Chinese Foreign Minister pointed out that what the Japanese Minister was requesting was more than covered by the demands as accepted as a result of Japan's Ultimatum, and that China could not agree to anything beyond the contents of the Ultimatum which she had accepted.

On May 18 an informal conference was held between the First Secretary of the Japanese Legation and an assistant, and the Vice-Minister of Foreign Affairs and a secretary. The Japanese representatives insisted upon "the Liaotung Peninsula" being substituted for "Port Arthur and Dalny" in the Treaty, and indicated that the Japanese Government intended to shut Manchuria against other foreigners.

CHINESE GOVERNMENT TREASURY BONDS

The following item regarding Chinese Treasury Bonds appeared in the Financial columns of a recent issue of the London "Truth":—

"A holder of Chinese Government 6% Treasury notes writes complaining that he has not yet received the half-yearly interest due on 31st December last....The hitch that has occurred in the service of these notes is no reflexion upon the Chinese Government. An amount sufficient to cover interest and amortisation was handed to the representative in Peking of the Austrian syndicate. The funds, I believe, are at the present time in Austria, and owing to the war the banker with whom they are deposited is forbidden to remit any portion of them to this country. The letter from the Laenderbak leaves room for hoping that a way will be found out of the impasse through the co-operation of the Chinese Government."

In this connexion, it may be observed that the Chinese Government has always endeavoured to promptly meet the services of foreign loans, including the period of 1912 when the financial condition of the Chinese Government was exceedingly stringent. At present as tranquillity has been restored in the country and the finance is in a sound state, there is still less reason why the Chinese Government should fail to fulfill promptly its obligations. The statement in the London "Truth" that the necessary funds have been provided and handed over by the Chinese Government to the Austrian syndicate is quite correct. The facts are as follows. The Chinese Government handed over the funds necessary to redeem all of the coupons and bonds due on December 31st, 1914, several days before the due date. to Messrs. Arnhold, Karberg & Co., of Tientsin, the agency which originally negotiated the loan. The Government has on file a receipt from the said Company. The Chinese Government instructed Messrs. Arnhold, Karberg & Co. to transfer the money at once to Europe to pay the maturities. Through no fault of the Chinese Government but because of the effects of the European War, a delay occurred in the transfer of the funds by the said Company to Great Britain and France. As a consequence of the delay British and French bondholders made enquiries at the Chinese Legations. When the delay of the transfer was reported to Peking, the Chinese Government immediately instructed the Chinese Minister of Vienna to take up this matter with the Austrian syndicate. As a result, the Austrian Syndicate transferred the required funds amounting to over £40,000. to the Chinese Minister in London via The Hague, to pay British and French holders. The Austrian Syndicate has also agreed to compensate the bondholders for the delay in paying the interest on the overdue amounts, and the whole case has now been settled.

*The effort being made by Japan to have the words "Liaotung Peninsula" inserted in the Treaty instead of "Port Arthur and Dalny," as given in the demands and the Ultimatum sent to China by Japan, is extremely significant, and is but another evidence of the peculiar methods employed by Japan secretly to acquire concessions not openly asked for. Port Arthur and Dalny may include the territory south of the lower boundary line shown in the accompanying map, but the Liaotung Peninsula would include all the neutral zone to the upper boundary line. In the agreement defining the boundaries of the leased and neutralized territory in the Liaotung Peninsula, signed at St. Petersburg on May 7, 1898, the Governments of Russia and China agreed upon the following:—

Article I. In accordance with the IInd Article of the original Treaty the northern territory leased and yielded to Russia—Port Arthur, Talienwan, and the Liaotung Peninsula—shall commence from the north side of A-tang Bay on the west coast of Liaotung and shall pass through the ridge of A-tang Mountain (the mountain ridge being included in the leased ground) to the east coast of Liaotung near the north side of P'itzuwo Bay. Russia shall be allowed the use of all the waters adjacent to the leased territory and all the islands around it. Both countries shall appoint special officers to survey the ground and determine the limits of the leased territory.

Article II. To the north of the boundary fixed in Article I, there shall, in accordance with Article V of the Peking Treaty, be a neutral ground, the northern boundary of which shall commence on the west coast of Liaotung at the mouth of Kiachou River, shall pass north of Yuyenchang to the Tayang River, and follow the left bank of that river to its mouth, which shall be included in the neutral territory.

SUPPLEMENT TO

THE FAR EASTERN REVIEW

MAY, 1915

NEW TREATIES BETWEEN CHINA AND JAPAN

(*Translated from the Chinese*)

Treaty Respecting the Province of Shantung.

His Excellency the President of the Republic of China and His Majesty the Emperor of Japan, having resolved to conclude a Treaty with a view to the maintenance of general peace in the Extreme East and the further strengthening of the relations of friendship and good neighbourhood now existing between the two nations, have for that purpose named as their Plenipotentiaries, that is to say:

His Excellency the President of the Republic of China, Lou Tseng-tsiang, *Chung-ching*, First Class *Chia Ho* Decoration, Minister of Foreign Affairs.

And His Majesty the Emperor of Japan, Hioki Eki, *Jushii*, Second Class of the Imperial Order of the Sacred Treasure, Minister Plenipotentiary, and Envoy Extraordinary:

Who, after having communicated to each other their full powers and found them to be in good and due form, have agreed upon and concluded the following Articles:—

Article 1. The Chinese Government agrees to give full assent to all matters upon which the Japanese Government may hereafter agree with the German Government relating to the disposition of all rights, interests and concessions which Germany, by virtue of treaties or otherwise, possesses in relation to the Province of Shantung.

Article 2. The Chinese Government agrees that as regards the railway to be built by China herself from Chefoo or Lungkow to connect with the Kiaochow-Tsinanfu railway, if Germany abandons the privilege of financing the Chefoo-Weihsien line, China will approach Japanese capitalists to negotiate for a loan.

Article 3. The Chinese Government agrees in the interest of trade and for the residence of foreigners, to open by China herself as soon as possible certain suitable places in the Province of Shantung as Commercial Ports.

Article 4. The present treaty shall come into force on the day of its signature.

The present treaty shall be ratified by His Excellency the President of the Republic of China and His Majesty the Emperor of Japan, and the ratification thereof shall be exchanged at Tokio as soon as possible.

In witness whereof the respective Plenipotentiaries of the High Contracting Parties have signed and sealed the present Treaty, two copies in the Chinese language and two in Japanese.

Done at Peking this twenty-fifth day of the fifth month of the fourth year of the Republic of China, corresponding to the same day of the same month of the fourth year of Taisho.

Exchange of Notes Respecting Shantung

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

In the name of the Chinese Government I have the honour to make the following declaration to your Government:—"Within the Province of Shantung or along its coast no territory or island will be leased or ceded to any foreign Power under any pretext."

I avail, etc.,

(Signed) LOU TSENG-TSIANG.

His Excellency,
Hioki Eki,
Japanese Minister.

Reply

Peking, the 25th day of the 5th month of the 4th year of Taisho.

Excellency,

I have the honour to acknowledge the receipt of Your Excellency's note of this day's date in which you made the following declaration in the name of the Chinese Government:—"Within the Province of Shantung or along its coast no territory or island will be leased or ceded to any foreign Power under any pretext."

In reply I beg to state that I have taken note of this declaration.

I avail, etc.,

(Signed) HIOKI EKI.

His Excellency,
Lou Tseng-tsiang,
Minister Foreign Affairs.

Exchange of Notes Respecting the Opening of Ports in Shantung.

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

I have the honour to state that the places which ought to be opened as Commercial Ports by China herself, as provided in Article 3 of the Treaty respecting the Province of Shantung signed this day, will be selected and the regulations therefor will be drawn up, by the Chinese Government itself, a decision concerning which will be made after consulting the Minister of Japan,

I avail, etc.,

(Signed) LOU TSENG-TSIANG.

Reply

Peking, the 25th day of the 5th month of the 4th year of Taisho.

Excellency,

I have the honour to acknowledge the receipt of Your Excellency's note of this day's date in which you stated "that the places which ought to be opened as Commercial Ports by China herself, as provided in Article 3 of the Treaty respecting the province of Shantung signed this day, will be selected and the regulations therefor, will be drawn up by the Chinese Government itself, a decision concerning which will be made after consulting the Minister of Japan."

In reply, I beg to state that I have taken note of the same.

I avail, etc.,

(Signed) Hioki Eki.

His Excellency,
Lou Tseng-tsiang,
Minister of Foreign Affairs.

Exchange of Notes Respecting the Restoration of the Leased Territory of Kiaochow Bay.

Peking, the 25th day of the 5th month of the 4th year of Taisho.

Excellency,

In the name of my Government I have the honour to make the following declaration to the Chinese Government:—

When, after the termination of the present war, the leased territory of Kiaochow Bay is completely left to the free disposal of Japan, the Japanese Government will restore the said leased territory to China under the following conditions:—

1. The whole of Kiaochow Bay to be opened as a Commercial Port.

2. A concession under the exclusive jurisdiction of Japan to be established at a place designated by the Japanese Government.

3. If the foreign Powers desire it, an international concession may be established.

4. As regards the disposal to be made of the buildings and properties of Germany and the conditions and procedure relating thereto, the Japanese Government and the Chinese Government shall arrange the matter by mutual agreement before the restoration.

I avail, etc.,

(Signed) Hioki Eki.

His Excellency,
Lou Tseng-tsiang,
Minister of Foreign Affairs.

Reply

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

I have the honour to acknowledge the receipt of your Excellency's note of this day's date in which you made the following declaration in the name of your Government:—

"When, after the termination of the present war, the leased territory of Kiaochow Bay is completely left to the free disposal of Japan, the Japanese Government will restore the said leased territory to China under the following conditions:—

1. The whole of Kiaochow Bay to be opened as a Commercial Port.

2. A concession under the exclusive jurisdiction of Japan to be established at a place designated by the Japanese Government.

3. If the foreign Powers desire it, an international concession may be established.

4. As regards the disposal to be made of the buildings and properties of Germany and the conditions and procedure relating thereto, the Japanese Government and the Chinese Government shall arrange the matter by mutual agreement before the restoration."

In reply, I beg to state that I have taken note of this declaration.

I avail, etc.,

(Signed) Lou Tseng-tsiang.

Treaty respecting South Manchuria and Eastern Inner Mongolia.

His Excellency the President of the Republic of China and His Majesty the Emperor of Japan, having resolved to conclude a Treaty with a view to developing their economic relations in South Manchuria and Eastern Inner Mongolia, have for that purpose named as their Plenipotentiaries, that is to say;

His Excellency the President of the Republic of China, Lou Tseng-tsiang, *Chung-ching*, First Class *Chia-ho* Decoration, and Minister of Foreign Affairs; and His Majesty the Emperor of Japan, Hioki Eki, *Jushii*, Second Class of the Imperial Order of the Sacred Treasure, Minister Plenipotentiary and Envoy Extraordinary;

Who, after having communicated to each other their full powers, and found them to be in good and due form, have agreed upon and concluded the following Articles:—

Article 1. The two High Contracting Parties agree that the term of lease of Port Arthur and Dalny and the terms of the South Manchuria Railway and the Antung-Mukden Railway, shall be extended to 99 years.

Article 2. Japanese subjects in South Manchuria may, by negotiation, lease land necessary for erecting suitable buildings for trade and manufacture or for prosecuting agricultural enterprises.

Article 3. Japanese subjects shall be free to reside and travel in South Manchuria and to engage in business and manufacture of any kind whatsoever.

Article 4. In the event of Japanese and Chinese desiring jointly to undertake agricultural enterprises and industries incidental thereto, the Chinese Government may give its permission.

Article 5. The Japanese subjects referred to in the preceding three articles, besides being required to register with the local Authorities passports which they must procure under the existing regulations, shall also submit to the police laws and ordinances and taxation of China.

Civil and criminal cases in which the defendants are Japanese shall be tried and adjudicated by the Japanese Consul; those in which the defendants are Chinese shall be tried and adjudicated by Chinese Authorities. In either case an officer may be deputed to the court to attend the proceedings. But mixed civil cases between Chinese and Japanese relating to land shall be tried and adjudicated by delegates of both nations conjointly in accordance with Chinese law and local usage.

When, in future, the judicial system in the said region is completely reformed, all civil and criminal cases concerning Japanese subjects shall be tried and adjudicated entirely by Chinese law courts.

Article 6. The Chinese Government agrees, in the interest of trade and for the residence of foreigners, to open by China herself, as soon as possible, certain suitable places in Eastern Inner Mongolia as Commercial Ports.

Article 7. The Chinese Government agrees speedily to make a fundamental revision of the Kirin-Changchun Railway Loan Agreement, taking as a standard the provisions in railway loan agreements made heretofore between China and foreign financiers.

When in future, more advantageous terms than those in existing railway loan agreements are granted to foreign financiers in connection with railway loans, the above agreement shall again be revised in accordance with Japan's wishes.

Article 8. All existing treaties between China and Japan relating to Manchuria shall, except where otherwise provided for by this Treaty, remain in force.

Article 9. The present Treaty shall come into force on the date of its signature. The present Treaty shall be ratified by His Excellency the President of the Republic of China and His Majesty the Emperor of Japan, and the ratifications thereof shall be exchanged at Tokio as soon as possible.

In witness whereof the respective Plenipotentiaries of the two High Contracting Parties have signed and sealed the present Treaty, two copies in the Chinese language and two in Japanese.

Done at Peking this twenty-fifth day of the fifth month of the fourth year of the Republic of China, corresponding to the same day of the same month of the fourth year of Taisho.

Exchange of Notes Respecting the Terms of Lease of Port Arthur and Dalny and the Terms of South Manchurian and Antung-Mukden Railways

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

I have the honour to state that, respecting the provisions contained in Article I of the Treaty relating to South Manchuria and Eastern Inner Mongolia, signed this day, the term of lease of Port Arthur and Dalny shall expire in the 86th year of the Republic or 1997. The date for restoring the South Manchuria Railway to China shall fall due in the 91st year of the Republic or 2002. Article 12 in the original South Manchurian Railway Agreement providing that it may be redeemed by China after 36 years from the day on which the traffic is opened is hereby cancelled. The term of the Antung-Mukden Railway shall expire in the 96th year of the Republic or 2007.

I avail, etc.,

(Signed) Lou Tseng-tsiang.

His Excellency,
Hioki Eki,
Japanese Minister.

Reply

Peking, the 25th day of the 5th month of the 4th year of Taisho.

Excellency,

I have the honour to acknowledge the receipt of Your Excellency's note of this day's date in which you stated that "respecting the provisions contained in Article I of the Treaty relating to South Manchuria and Eastern Inner Mongolia, signed this day, the term of lease of Port Arthur and Dalny shall expire in the 86th year of the Republic or 1997. The date for restoring the South Manchurian Railway to China shall fall due in the 91st year of the Republic or 2002. Article 12 in the original South Manchurian Railway Agreement providing that it may be redeemed by China after 36 years from the day on which the traffic is opened, is hereby cancelled. The term of the Antung-Mukden Railway shall expire in the 96th year of the Republic or 2007."

In reply I beg to state that I have taken note of the same.

I avail, etc.,

(Signed) Hioki Eki.

His Excellency,
Lou Tseng-tsiang,
Minister of Foreign Affairs.

Exchange of Notes Respecting the Opening of Ports in Eastern Inner Mongolia

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

I have the honour to state that the places which ought to be opened as Commercial Ports by China herself, as provided in Article 6 of the Treaty respecting South Manchuria and Eastern Inner Mongolia signed this day, will be selected, and the regulations therefor will be drawn up, by the Chinese Government itself, a decision concerning which will be made after consulting the Minister of Japan.

I avail, etc.,

(Signed) Lou Tseng-tsiang.

His Excellency,
Hioki Eki,
Japanese Minister.

Reply

Peking, the 25th day of the 5th month of the 4th year of Taisho.

Excellency,

I have the honour to acknowledge the receipt of Your Excellency's note of this day's date in which you stated "that the places which ought to be opened as Commercial Ports by China herself, as provided in Article 6 of the Treaty respecting South Manchuria and Eastern Inner Mongolia signed this day, will be selected, and the regulations therefor, will be drawn up, by the Chinese Government itself, a decision concerning which will be made after consulting the Minister of Japan."

In reply, I beg to state that I have taken note of the same.

I avail, etc.,

(Signed) Hioki Eki.

His Excellency,
Lou Tseng-tsiang,
Minister of Foreign Affairs.

South Manchuria

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

I have the honour to state that Japanese subjects shall, as soon as possible, investigate and select mines in the mining areas in South Manchuria specified hereinunder, except those being prospected for or worked, and the Chinese Government will then permit them to prospect or work the same; but before the Mining regulations are definitely settled, the practice at present in force shall be followed.

Fengtien.

Locality	District	Mineral
Niu Hsin T'ai	Pen-hsi	Coal
Tien Shih Fu Kou	"	"
Sha Sung Kang	Hai-lung	"
T'ieh Ch'ang	Tung-hua	"
Nuan Ti T'ang	Chin	"
An Shan Chan region	From Liaoyang to Pen-hsi	Iron

Kirin (Southern portion)

Locality	District	Mineral
Sha Sung Kang	Ho-lung	Coal & Iron
Kang Yao	Chi-lin (Kirin)	Coal
Chia P'i Kou	Hua-tien	Gold

I avail, etc.,

(Signed) Lou Tseng-tsiang.

His Excellency,
Hioki Eki,
Japanese Minister.

Reply

Peking, the 25th day of the 5th Month of the 4th Year of Taisho.

Excellency,

I have the honour to acknowledge the receipt of Your Excellency's note of this day respecting the opening of mines in South Manchuria, stating: "Japanese subjects shall, as soon as possible, investigate and select mines in the mining areas in South Manchuria specified hereinunder, except those being prospected for or worked, and the Chinese Government will then permit them to prospect or work the same; but before the Mining regulations are definitely settled, the practice at present in force shall be followed.

Fengtien.

Locality	District	Mineral
Niu Hsin T'ai	Pen-hsi	Coal
Tien Shih Fu Kou	"	"
Sha Sung Kang	Hai-lung	"
T'ieh Ch'ang	Tung-hua	"
Nuan Ti T'ang	Chin	"
An Shan Chan region	From Liaoyang to Penhsi	Iron

Kirin (southern portion)

Locality	District	Mineral
Sha Sung Kang	Ho-lung	Coal & Iron
Kang Yao	Chi-lin (Kirin)	Coal
Chia P'i Kou	Hua-tien	Gold.

I avail, etc.,

(Signed) Hioki Eki.

His Excellency,
Lou Tseng-tsiang,
Minister of Foreign Affairs of the Republic of China.

Exchange of Notes Respecting Railways and Taxes in South Manchuria and Eastern Inner Mongolia

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

In the name of my Government,

I have the honour to make the following declaration to your Government:—

China will hereafter provide funds for building necessary railways in South Manchuria and Eastern Inner Mongolia; if foreign capital is required China may negotiate for a loan with Japanese capitalists first: and further, the Chinese Government, when making a loan in future on the security of the taxes in the above-mentioned places (excluding the salt and customs revenue which have already been pledged by the Chinese Central Government) may negotiate for it with Japanese capitalists first.

I avail, etc.,

(Signed) Lou Tseng-tsiang.

His Excellency,
Hioki Eki,
Japanese Minister.

Reply

Peking, the 25th day of the 5th month of the 4th year of Taisho.

Excellency,

I have the honour to acknowledge the receipt of Your Excellency's note of this day's date respecting railways and taxes in South Manchuria and Eastern Inner Mongolia in which you stated:

"China will hereafter provide funds for building necessary railways in South Manchuria and Eastern Inner Mongolia; if foreign capital is required China may negotiate for a loan with Japanese capitalists first; and further, the Chinese Government, when making a loan in future on the security of taxes in the above mentioned places (excluding the salt and customs revenue which have already been pledged by the Chinese Central Government) may negotiate for it with Japanese capitalists first."

In reply I beg to state that I have taken note of the same.

I avail, etc.,

(Signed) Hioki Eki.

His Excellency,
Lou Tseng-tsiang,
Minister of Foreign Affairs.

Exchange of Notes Respecting the Employment of Advisers in South Manchuria

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

In the name of the Chinese Government, I have the honour to make the following declaration to your Government:—

"Hereafter, if foreign advisers or instructors on political, financial, military or police matters are to be employed in South Manchuria, Japanese may be employed first."

I avail, etc.,

(Signed) Lou Tseng-tsiang.

His Excellency,
Hioki Eki,
Japanese Minister.

Reply

Peking, the 25th day of the 5th month of the 4th year of Taisho.

Excellency,

I have the honour to acknowledge the receipt of Your Excellency's note of this day's date in which you made the following declaration in the name of your Government:—

"Hereafter if foreign advisers or instructors in political, military or police matters are to be employed in South Manchuria, Japanese may be employed first."

In reply, I beg to state that I have taken note of the same.

I avail, etc.,

(Signed) Hioki Eki.

Exchange of Notes Respecting the Explanation of "Lease by Negotiation" in South Manchuria

Peking, the 25th day of the 5th month of the 4th year of Taisho.

Excellency,

I have the honour to state that the term "lease by negotiation" contained in Article 2 of the Treaty respecting South Manchuria and Eastern Inner Mongolia signed this day shall be understood to imply a long-term lease of not more than thirty years and also the possibility of its unconditional renewal.

I avail, etc.

(Signed) Hioki Eki.

His Excellency,
Lou Tseng-tsiang,
Minister of Foreign Affairs.

Reply

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

I have the honour to acknowledge the receipt of Your Excellency's note of this day's date in which you state:

"The term 'lease by negotiation' contained in Article 2 of the Treaty respecting South Manchuria and Eastern Inner Mongolia signed this day shall be understood to imply a long-term lease of not more than thirty years and also the possibility of its unconditional renewal."

In reply I beg to state that I have taken note of the same.

I avail, etc.,

(Signed) Lou Tseng-tsiang.

His Excellency,
Hioki Eki, Japanese Minister.

Exchange of Notes Respecting the Arrangement for Police Laws and Ordinances and Taxation in South Manchuria and Eastern Inner Mongolia

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

I have the honour to state that the Chinese Authorities will notify the Japanese Consul of the police laws and ordinances and the taxation to which Japanese subjects shall submit according to Article 5 of the Treaty respecting South Manchuria and Eastern Inner Mongolia signed this day so as to come to an understanding with him before their enforcement.

I avail, etc.,

(Signed) Lou Tseng-tsiang.

His Excellency,
Hioki Eki,
Japanese Minister.

Reply

Peking, the 25th day of the 5th month of the 4th year of Taisho.

Excellency,

I have the honour to acknowledge the receipt of your Excellency's note of this day's date in which you state:

"The Chinese Authorities will notify the Japanese Consul of the police laws and ordinances and the taxation to which Japanese subjects shall submit according to Article 5 of the Treaty respecting South Manchuria and Eastern Inner Mongolia signed this day so as to come to an understanding with him before their enforcement."

In reply, I beg to state that I have taken note of the same.

I avail, etc.,

(Signed) Hioki Eki.

His Excellency,
Lou Tseng-tsiang,
Minister of Foreign Affairs.

The Postponement of Articles 2, 3, 4 & 5 of the Treaty Respecting South Manchuria and Eastern Inner Mongolia

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

I have the honour to state that, inasmuch as preparations have to be made regarding Articles 2, 3, 4 & 5 of the Treaty respecting South Manchuria and Eastern Inner Mongolia signed this day, the Chinese Government proposes that the operation of the said Articles be postponed for a period of three months beginning from the date of the signing of the said Treaty.

I hope your Government will agree to this proposal.

I avail, etc.,

(Signed) LOU TSENG-TSIANG.

His Excellency,
Hioki Eki,
Japanese Minister.

Reply

Peking, the 25th day of the 5th month of the 4th year of Taisho.

Excellency,

I have the honour to acknowledge the receipt of your Excellency's note of this day's date in which you stated that, "inasmuch as preparations have to be made regarding Articles 2, 3, 4 & 5 of the Treaty respecting South Manchuria and Eastern Inner Mongolia signed this day, the Chinese Government proposes that the operation of the said Articles be postponed for a period of three months beginning from the date of the signing of the said Treaty."

In reply, I beg to state that I have taken note of the same.

I avail, etc.,

(Signed) HIOKI EKI.

His Excellency,
Lou Tseng-tsiang,
Minister of foreign Affairs.

Exchange of Notes Respecting the Matter of Hanyehping

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Monsieur le Ministre,

I have the honour to state that if in future the Hanyehping Company and the Japanese capitalists agree upon co-operation, the Chinese Government, in view of the intimate relations subsisting between the Japanese capitalists and the said Company, will forthwith give its permission. The Chinese Government further agrees not to confiscate the said Company, nor without the consent of the Japanese capitalists to convert it into a state enterprise, nor cause it to borrow and use foreign capital other than Japanese.

I avail, etc.,

(Signed) LOU TSENG-TSIANG.

His Excellency,
Hioki Eki,
Japanese Minister.

Reply

Peking, the 25th day of the 5th month of the 4th year of Taisho.

Excellency,

I have the honour to acknowledge the receipt of your Excellency's note of this day's date in which you state:

"If in future the Hanyehping Company and the Japanese capitalists agree upon co-operation, the Chinese Government, in view of the intimate relations subsisting between the Japanese capitalists and the said Company, will forthwith give its permission. The Chinese Government further agrees not to confiscate the said Company, nor, without the consent of the Japanese capitalists to convert it into a state enterprise, nor cause it to borrow and use foreign capital other than Japanese."

In reply, I beg to state that I have taken note of the same.

I avail, etc.,

(Signed) HIOKI EKI.

His Excellency,
Lou Tseng-tsiang,
Minister of Foreign Affairs.

Exchange of Notes Respecting the Fukien Question

Peking, the 25th day of the 5th month of the 4th year of the Republic of China.

Excellency,

A report has reached me to the effect that the Chinese Government has the intention of permitting foreign nations to establish, on the coast of Fukien Province, dock-yards, coaling stations for military use, naval bases, or to set up other military establishments; and also of borrowing foreign capital for the purpose of setting up the above-mentioned establishments.

I have the honour to request that your Excellency will be good enough to give me a reply stating whether or not the Chinese Government really entertains such an intention.

I avail, etc.,

(Signed) HIOKI EKI.

His Excellency,
Lou Tseng-tsiang.
Minister of Foreign Affairs.

Reply

Peking, the 25th day of the fifth month of the 4th year of the Republic of China.

Monsieur le Ministre,

I have the honour to acknowledge the receipt of your Excellency's note of this day's date, which I have noted.

In reply I beg to inform you that the Chinese Government hereby declares that it has given no permission to foreign nations to construct, on the coast of Fukien Province, dock-yards, coaling stations for military use, naval bases, or to set up other military establishments; nor does it entertain an intention of borrowing foreign capital for the purpose of setting up the above-mentioned establishments.

I avail, etc.,

(Signed) LOU TSENG-TSIANG.

His Excellency,
HIOKI EKI,
Japanese Minister.

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ECONOMIC EFFECT OF THE EXTENSION OF JAPAN'S SPHERES OF INFLUENCE IN CHINA

In previous articles in regard to the demands presented by Japan to China, we have chiefly dealt with the political aspect of the situation thus created. It has been shown that Japan sought to secure political control of South Manchuria, Eastern Inner Mongolia, Shantung and Fukien, and moreover, that she desired to obtain a dominating voice in the political, military and financial affairs of the Republic by the appointment of Japanese advisers. By asking China to assent to the proposition that the preservation of the territorial integrity of China was a matter that solely concerned China and Japan, she endeavoured to establish a form of suzerainty over the Republic. These demands, involving as they do a material alteration in the *status quo* in Eastern Asia, are undoubtedly contrary to the principle upon which the Anglo-Japanese Alliance, the Root-Takahira Convention and other agreements to which Japan is a party, are based. It may be anticipated that when the time is opportune the Powers whose political interests are concerned will give this aspect of the matter due attention.

Turning to the economic incidence of the demands, it may be said that to many, if not to most, foreigners China is chiefly interesting because of its possibilities as a world market. Some of those who are actually resident in the Republic feel a deep sympathy with a country that is striving to emancipate itself from the traditions and customs that have checked all progress in the past. They know that the Central Government is slowly, but effectually, reforming the internal administration; restoring order after the financial chaos caused by the reckless methods of the late dynasty, and rooting out the canker of corruption that has hitherto made the Chinese official a menace to the Chinese people and an object of contempt to the foreigner. The sympathetic observer sees that genuine efforts are being made to bring about the reformations necessary, and he realizes that, if China is helped instead of hindered by other Powers, she will in time achieve a degree of strength and stability that will entitle her to claim an effective voice in Far Eastern politics. But considerations of this character appeal only to a small minority of foreigners and the fact must be faced that while the preservation of China's sovereignty and independence are but of academic interest to the majority, the retention of a market that has already been extremely valuable and that possesses practically limitless future possibilities is regarded as a matter of the first importance.

Experience has shown that in regions in China in which political control is exercised by the Japanese the tendency is for foreign trade other than Japanese to diminish. South Manchuria is a case in point. When South Manchuria was in Russian occupation a large trade in British and American manufactures was built up. It was trade of a very valuable character, as the people of Manchuria, while discriminating purchasers, were always prompt in meeting their engagements and were in every way good customers. Some difficulty is experienced in collecting statistics to show to what extent Japanese trade has increased and foreign trade fallen off in South Manchuria since the war between Russia and Japan. The Customs Office at Dalny or Dairen was established only a few months before the war, and consequently comparative figures are not available. Newchwang was the chief port of entry in 1903 (the year before the war), but the greater bulk of the trade now passes through Dalny and Antung. However, the Chinese Customs returns in relation to Newchwang, notwithstanding the changed conditions there, are still of some value for comparative purposes, as it may be assumed that the falling off in the trade because of the rivalry of Dalny and Antung would affect foreign countries more or less equally, although the returns of Japanese trade at Newchwang might be expected to show the greatest falling off as it would naturally flow through the nearer ports. This latter result has not proved to be the case. While figures in regard to the total trade of each of the respective countries whose goods pass through Newchwang into Manchuria are not available it is, perhaps, permissible

to quote those relating to one or two standard staples, and to assume from what these disclose that the general tendency has been similar. In the Chinese Customs returns for Newchwang for the year 1903, we find under the heading "gray, plain sheeting" the following:—

Country	Pieces.
American	1,033,089
Japanese	70,800
English	5,200

Under this heading the figures in 1913 were:—

Country	Pieces
American	225,280
Japanese	124,840
English	4,290

It will be noticed that there has been a very marked falling off in the total trade, but that while American trade fell off by more than 75 per cent., and that of Great Britain by 20 per cent., Japan's trade increased by some 75 per cent. The figures given suggest that the trade generally has fallen off materially, but we find under the comprehensive heading "cotton goods" in the Antung returns for 1913 the following:—

Country	Pieces
Japanese	1,374,744
English	27,007
American	90

This would indicate that much of the trade that formerly passed into Manchuria through Newchwang now finds Antung a more advantageous portal. It is also clear that trade is almost monopolised by Japan.

The figures for sheetings are sufficiently illuminating, and when attention is given to drills it will be seen that the diminution in foreign trade is not confined to one line. The following table presents the facts in regard to drills:—

Country	1903	1913
American	569,655	72,670
Japanese	87,430	80,075
English	380	1,829

In this instance Japan has ousted America from the premier position even at Newchwang, which for geographical and other reasons is the port least favoured by Japanese exporters (in 1907 it was estimated that Japanese imports to Manchuria in 1906 amounted to over G. $12,000,000, of which less than $1,500,000 paid duty at Newchwang).

It can be seen from the figures that have been quoted that Japanese goods, even when there was some limitation to the control exercised by Japan over South Manchuria, succeeded in displacing those from other countries. When we turn to Korea, which has reached the final stage of the journey upon which South Manchuria has progressed far and upon which, under Japan's guidance, Eastern Inner Mongolia, Shantung and Fukien are invited to start, it is found that the trade of countries other than Japan is steadily diminishing. Taking the items grey sheetings and shirtings, it is found that in 1909, the year before the annexation of Korea by Japan, Japan's share of the trade was fifty per cent., and Great Britain's forty-nine per cent. In 1913 the Japanese share was ninety per cent. and the British eight per cent. In the period in question the trade in British T cloths disappeared.

That Japanese political control in countries outside Japan proper involves the curtailment of the tradal opportunities of other nations is clear beyond question. Korea is now a portion of the Japanese Empire and it is only to be expected that Japan should secure commercial supremacy in the Peninsula. But this does not alter the significant fact that where the shadow of Japan's political power falls, the plant of foreign trade grows sickly. It is pertinent to inquire why this should be so. In South Manchuria there is supposed to be equal opportunity for the trade of all nations. The region is nominally a portion of the Republic of China and the Customs tariff is that in operation in other parts of the country, except in regard to Antung, where special arrangements prevail, as will be noted later. Why then should Japanese goods practically oust those manufactured in other countries? Geographical proximity is one explanation. To transport goods from Japan to Manchuria is much less costly and takes far less time than is the case in regard to goods manufactured in Europe or America. This in itself, other things equal, would give Japan a useful handicap in China generally, but this factor has existed at all times and in no way accounts for the extraordinary development of Japanese trade in Manchuria since the war. That, and other natural advantages, cannot account for Japan's success in driving her European and American rivals out of the South Manchuria market. The result has only been accomplished by systematic and sustained effort. For a considerable time after the conclusion of peace Japan refused to allow foreign traders to resume business in Manchuria, under the plea that until the withdrawal of troops was completed there was a danger of the betrayal of "military secrets." Japanese merchants were, however, allowed free access, their goods were allowed every railway facility by the military authorities and when at last foreign traders were permitted to resume operations they found their Japanese rivals securely entrenched. Pending the regular organization of the Customs Office at Dalny immense quantities of Japanese goods passed into Manchuria without paying duty, and it is said that Japanese merchants, supported by the military authorities, refused to pay the likin dues to which other foreign goods were subjected.

The possession of the South Manchuria Railway has been the greatest factor of all in securing the extension of Japanese trade. This line is under the sole control of the Japanese, and is a semi-official concern. There has never been open discrimination by the Railway Company in favour of Japanese goods, but the fact seems to be established that experience has taught the Chinese in Manchuria that the only way to ensure delivery of goods in anything like reasonable time is to order them through Japanese firms. Another aid is what has been aptly described as the "economic paternalism" of the Japanese Government, which takes the shape of subsidies to steamship lines and the provision of cheap capital to merchants. For example, the Manchurian Export Guild, composed of the leading Japanese spinning and weaving companies, is enabled on the Government guarantee to borrow money at 4½ per cent. The South Manchuria Railway Company is understood to allow a rebate to clients who contract for a large number of trucks to be used each year. This expedient, while not openly discriminating against European and American goods, has precisely the same effect, as the State supported Export Guild is able to secure the advantage offered while the ordinary foreign firms cannot avail themselves of it. Assistance is also freely given to the Japanese firms by the Japanese semi-official bank in Manchuria. In a word it can be said that the hapless European and American merchants were first of all kept out of Manchuria after the war by the Japanese military authorities until Japanese merchants had gained a firm hold of the trade, and were then confronted by the competition of the Japanese merchants, financiers and Government combined. Moreover the "chops" or trade marks of foreign manufacturers were counterfeited by the Japanese. In these circumstances the wonder is, not that the foreign trade other than Japanese should have diminished, but that it should continue to exist at all.

Another factor that has contributed to give Japanese trade an advantage over its competitors is the special reduction of one third of the ordinary Customs duty allowed on goods entering Manchuria at Antung. On June 2, 1913, an agreement was signed by the Inspector-General of Customs and the Japanese Minister to Peking by which this reduction was granted for all goods brought to Antung by the Korean railway. Inevitably these goods are almost, if not entirely, of Japanese origin. The reduced duty and the other adventitious aids that are given to Japanese manufactures necessarily severely handicap goods from Europe and America. In Northern Manchuria a similar reduction of one third of the Customs duty is granted upon goods carried by the Russian railway. This is an instance of a concession that was perfectly justifiable when it was first granted being perpetuated when circumstances have so entirely changed that it has become unnecessary and oppressive. In the old days the trade between Russia and Manchuria was carried on by caravans. This method of transportation was slow and costly and there was, therefore, some justification for a reduction in the Customs

impost. The advent of the railways has materially altered matters and at present the concession merely operates as an additional handicap upon the trade of the countries which are unable for various reasons to take advantage of the opportunities it offers. Directly the agreement for the reduction of the duty on goods passing through Antung was signed, the Korean Government Railways and the Japanese Government Railways reduced their freight charges on goods for Manchuria. The striking success of this move is realized when it is noted that in the first seven months after the reduction in railway charges and Customs duty the quantity of goods handled on the Korean Railway increased by 258 per cent. These goods were almost entirely Japanese.

According to the Decennial Report of the Chinese Maritime Customs for 1902-11 the importation of Japanese cotton cloth through Newchwang rose from 31,884 yards in 1902 to 8,449,170 yards in 1911. In the latter year, it is to be remarked, the bulk of the Japanese trade passed through Dalny. The geographical situation of Japan, as has already been pointed out, cannot account for this immense development of Japan's trade at the expense of other foreign countries. It is evident that the real cause is to be found in the co-operation of the Japanese Government with the Japanese merchants to secure a monopoly of the trade in foreign goods in the regions in which Japan claims to possess "special interests." The "door" of equal opportunity is technically kept "open," but in actual fact ingress is restricted to the Japanese.

When it is found that in one region in China in which the Japanese exercise political control or influence, the trade of European and American nations succumbs to Japanese state-aided attacks, it is fair to assume that similar results will follow the acquisition of special interests by Japan in other localities. Japan desires to extend her political influence over Eastern Inner Mongolia, Shantung and Fukien. Her avowed ambitions are confined for the moment to the regions named, but there is no guarantee that she will not seek, if opportunity offers, still further extension. As she claims to have acquired as one of the spoils of war the right secured by Germany to extend the railway from Tsinanfu to a point on the Peking-Hankow line, this brings her into Chihli, the metropolitan province. If eventually she succeeds in obtaining the right to construct the railways connecting Wuchang with Kiukiang and Nanchang, between Nanchang and Hangchow, and between Newchwang and Chaochow, her influence will be extended over Hupeh, Kiangsi and Kwangtung

For the present, consideration may be confined to those regions which Japan has shown it is her immediate intention to transform into Japanese spheres of influence. Eastern Inner Mongolia has no considerable interest for those engaged in importing foreign goods into China in present conditions. With the advent of satisfactory railway facilities, however, there is no reason why Eastern Inner Mongolia should not develop a large import and export trade. Now that China has yielded to Japan's demand that this region should be regarded as within her ambit of influence there is very little prospect that any development of trade will react favourably upon the business of European and American firms. The same methods that are driving all goods other than Japanese out of the South Manchuria markets will be adopted in all probability, and Japanese merchants with the support of their Government will establish themselves in an impregnable position.

Shantung

If the acquisition of Inner Eastern Mongolia by Japan as a sphere of influence can be regarded by the commercial interests of other countries without any pronounced dissatisfaction on the ground that the loss of a possible future advantage does not call for very keen regret, the case is quite different in regard to regions in which Europeans and Americans have built up important trading interests. Even if Kiaochou be retroceded to China, the retrocession appears likely to be hedged with such conditions that Japan's political influence in Shantung will still be paramount. She will retain possession of the Tsingtau-Tsinanfu Railway and will control the future extensions of the railway system in Shantung. The conditions that exist to-day in South Manchuria will thus be created in Shantung.

Oversea trade with Shantung passes for the most part through Tsingtau and Chefoo. Taking the latest statistics available, those for 1913, it is found that the total direct foreign trade amounted to G $21.267,311 of which G $11,087,975 was represented by imports. Japan easily led with imports to the value of $6,063,121, with Germany second, the value of her imports being G $2,107,752. American imports only reached the value of G $361,737, and those of Great Britain $349,696, but these figures hardly convey a correct impression as the goods of both countries are mainly imported from Shanghai and their value is consequently not shown. The direct importation from Hongkong was G $1,334,083 and from Singapore G $453,989. Taking specific items in regard to cotton goods, the following figures may be of interest for future reference and comparison.—

Sheeting:—		
American	82,227	pieces
English	7,830	"
Japanese	243,542	"
Drills.—		
American	22,814	"
English	4,323	"
Japanese	4,710	"
Jeans.—		
American	1,780	"
English	131,085	"
T-cloths		
English	392,992	"
Japanese	25,813	"

With fair conditions of competition it might be anticipated that Shantung would provide a very favourable field for the extension of European and American trade, but if control of the Customs at Tsingtau and of the railway from Tsingtau to Tsinanfu is retained by the Japanese it may be confidently predicted that the trade in goods not of Japanese manufacture will steadily diminish in value and volume. It must also be borne in mind that in China most firms carry on the business of importers and exporters combined. Should the import trade pass entirely into the hands of the people of one nation the export trade will naturally gravitate to them. This is what has happened in Manchuria, where supremacy in imports has enabled the Japanese to secure the bulk of the exporting business. A large business was done in exports from Shantung in the past, the principal commodities being cotton, silk, groundnuts and groundnut oil, hides and straw braid. The countries with which most of this trade is done are France, Russia, Germany, Japan and America, their respective shares being G $2,513,456, $1,754,-226, $1,669.150, $1,544,534 and $999,543. It is evident that the foreign trade which passes into Shantung through Tsingtau is already of considerable importance and there is reason to suppose that, with its population of 30,000,000, this trade would, under its normal conditions, attain large dimensions.

The rise of Tsingtau has caused Chefoo to decline in importance, but foreign goods of a considerable value pass into Shantung through this port. In 1913 the net foreign imports were to the value of G $6,607,531. Unfortunately the figures available in regard to this trade do not indicate the share of the respective countries, and consequently analysis is impossible. It may be remarked, however, that Japan's share of the import amounted to $1,716,656. Even without the additional artificial aid that is assisting the Japanese trader to drive his competitors out of the Manchurian market he is able to secure pre-eminence in North China ports. No one would raise any objection to this if when once goods were landed fair competition were allowed to ensue. What the European and American traders at Chefoo as well as at Tsingtau fear, is that the business they have laboriously built up by long years of patient effort will be wrested from them by the methods adopted in South Manchuria. It seems certain that the railways in the province will be dominated by the Japanese, and as has been shown earlier in this article, that condition of things darkens the prospects of the non-Japanese trader.

As Tsinanfu is not a seaport there are no returns procurable giving the statistics of imports from foreign countries and exports abroad. But there is considerable importation by

railway and over the Grand Canal, and it would be misleading to assume that the figures quoted for Tsingtau and Chefoo represent the total amount of foreign trade with Shantung.

Fukien

In the days when the China tea trade was booming Fukien enjoyed a degree of prosperity scarcely equalled by any other province. The high prices secured by growers led to the circulation of a comparatively large amount of money, and confidence was felt when Foochow was first opened to trade that a large and increasing business in foreign manufactures would be built up. But the tea trade fell upon hard times. The competition of India and Ceylon caused the price of China teas to fall off. Instead of endeavouring to hold their own by improving their methods, many of the Chinese growers abandoned, partially or wholly, the cultivation of the tea shrub and devoted their land to other crops, more especially sweet potatoes, as they could not secure sufficient profit from tea to purchase food-stuffs. As a result the temporary prosperity of the province gave place to impoverishment, and at the present time Fukien is one of the poorest of the eighteen provinces of China Proper.

There is no reason why Fukien should not in the future regain much of its former prosperity. In climate and soil it is peculiarly adapted for successful tea cultivation. Attention is being paid by the Chinese authorities to the failure on the part of the growers to improve their methods and steps are being taken to awaken them to the fact that a little intelligent effort would bring them a rich reward. If these endeavours be successful the condition of the people will improve and their purchasing power increase.

The population of Fukien is estimated at about 18,500,000. The means of transport are very poor, goods being carried by coolies or by boat. There is a small stretch of railway, about twenty miles in length, between Amoy and Changchowfu, but in present conditions there seems little prospect of its extension. When adequate means of communication are provided the existing export trade in tea, iron, timber, porcelain, indigo, tobacco, camphor, wax and coal may be expected to increase considerably.

The statistics for Foochow for the year 1913 show that the net value of the trade was Tls. 23,206,413 (£3,505,135), and of this Tls. 8,826,335 represented foreign imports. This was an advance of Tls. 1,178,097 over the total for 1912. The total value of the foreign cottons imported was Tls. 1,419,106, which is a ridiculous amount when it is borne in mind that the population of Foochow itself is 500,000. Japan does an extremely small trade in yarns, the Japanese importation in 1913 being to the value of Tls. 2,673 while that of Indian yarn imported was Tls. 785,823. The piece-goods imported are almost entirely of British origin.

The net foreign imports to Amoy, the other important treaty port in Fukien, were valued at Tls. 10,595,532 and the total trade at Tls. 20,068,932. This trade is very similar in character to that of Foochow and is capable of large development. If the railway to Changchowfu were extended to tap the interior districts the export trade would be greatly benefited and this would of course react beneficially on the trade in imports.

From these figures it will be seen that, while as yet there is no great volume of foreign trade with Fukien, there is a reasonable prospect of development when the natural resources, including the mines, are exploited. But if the conditions that prevail in South Manchuria are reproduced in Fukien the established foreign interests other than Japanese in the province may be expected to decrease in value instead of sharing in any development.

The Open Door

This article has been written with the object of showing that the extension of Japanese political influence in China means the closing of the door of equal trading opportunity. If that has been the effect in one portion of China it is legitimate to assume that a similar result will follow in others. The principle of equal opportunity was adopted by all the great commercial Powers because it was realized that the alternative, the Spheres of Influence policy, was fraught with danger to China and to themselves. If there is one country more than another that stands to benefit by the maintenance of the open door policy it is Japan. As long as there is equal opportunity for all in China Japan must necessarily gain the largest share in any development of trade—provided, of course, that her manufactures are of satisfactory quality and that she does not antagonise the Chinese people. Japan has the advantage of proximity; of cheap labour in factory and steamer; of state aid in the shape of reduced freight charges on the Imperial Railways of Japan, of subsidies to steamship companies, of cheap financial accommodation. With these advantages, in conjunction with the sentimental preference that China might be expected to feel for closer commercial relationship with another Oriental nation, Japan, it would be thought, could watch with equanimity the steady increase of her trade with China without seeking to accelerate it by any dubious methods. Japan's trade with China increased from ninety-six million Haikwan Taels in 1905 to one hundred and eighty-five million Haikwan Taels in 1913. Her percentage of the foreign trade of China increased from 14 per cent. to nearly 19 per cent., while during the same period the percentage of the trade of the United Kingdom and Hongkong fell from 48 per cent. to less than 41 per cent. These statistics show plainly that the open door policy in China has been most beneficial to Japanese trade.

Yet Japan is not satisfied. She not only wants her full share in the increased trade that the progressive policy of the Chinese Government and the restoration of orderly conditions in the interior of China is creating, but she is endeavouring to extend her political influence so that she may filch from other foreigners the trade they have already established. To achieve this end she has compelled China, by a threat of war, to acquiesce in a considerable extension of her political influence and to agree to discuss in the future proposals that are designed undisguisedly to render the principle of equal opportunity inoperative. Some Japanese publicists are quite candid in regard to Japan's ambitions. They state that Japan is sufficiently powerful to compel the European and American merchant to surrender the China market to exclusive Japanese exploitation. Japan professed belief in the open door policy as long as she thought it was advantageous for her to do so, but the time, they declare, has come when Japan can disclose her real policy, that of exclusion. It has also been foreshadowed that the proclamation of a protectorate over China will be followed by the application of the Japanese tariff to the Republic, thus raising a tariff wall round China with gates through which only Japan may pass.

This may be thought to be the dream of a few hot-headed chauvinists, but those who have studied utterances of Japanese publicists and articles in the Japanese Press relating to Japan's international policy, are aware that there is considerable justification for the belief that Japan designs to apply to the Far East generally the policy of exclusion that kept the foreigner and foreign goods out of Japan itself until the middle of last century. Japan abandoned the policy of exclusion at the beginning of the Meiji era, not because she wished for intercourse with the outer world, but because the foreigner was strong enough to force her to adopt a policy against which her instincts rebelled. Japan thereupon set herself to learn the secret of the foreigner's superiority. She has succeeded. She has learnt to utilise steam and electricity; she has adopted the financial and commercial methods that have enriched the West; the sciences and arts that have ameliorated life conditions in Europe and America are taught in her colleges and universities. Now Japan considers that she has nothing more to learn. Foreign friendship, she considers, is of no further service to her, and she is strong enough to revert to the policy of exclusion which she was forced unwillingly to abandon. But in acquiring knowledge of the secret of Western superiority Japan created for herself requirements that could not be satisfied if the policy of exclusion were reverted to in its original form. Her traders want markets, her manufacturers want raw materials. Moreover three successful military enterprises have led to the development of larger ambitions. In due time the idea of applying the policy of exclusion to Asia instead of Japan was formed. The world has just witnessed a long step forward towards its realization.

Whatever cautious Secretaries of State for Foreign Affairs may say, Japan has revived the policy of Spheres of Influence in China. She is using her military supremacy in the Far East to secure for herself the foreign trade of China and the sole

benefit of the development of the natural resources of the Republic. Is she to be permitted to perfect her plans to expel the foreigner from the lands to which she has introduced the blessings of civilization while creating a mutually advantageous trade? Is it in the interest of the world that Japan should be allowed to establish a political and commercial hegemony over Asia? The answer is obvious.

It is not suggested that Japan could ever succeed in building round Asia, or even China, a hedge bristling with Japanese bayonets. To ensure success for a project of such magnitude the first essential would be to secure the cordial co-operation of China. Even if Japan were not obsessed by any vision of political and commercial supremacy over half the world the friendship of China would be of priceless value to her. But she has never sought to win that friendship. The settled policy of Japan towards China has been to treat her with severity and subject her to humiliation. Many opportunities to win China's good-will have presented themselves, but advantage has never been taken of them and it may be said with confidence that, as a result of Japan's blundering diplomacy, there exists in all parts of China a deep-seated hatred of the Japanese people. In this may be found a means of preserving the foreign interests in China which Japan is seeking to destroy. It must not be forgotten that the long drawn out diplomatic battle that terminated at 1.30 a.m. on May 9 when the Chinese Government surrendered to Japanese threats of war, was fought by the Chinese, not only in their own interests, but in the interests of the nations that have built up China's foreign trade. Denied aid from the very countries that had insisted most strongly upon the principle of equal opportunity, China stubbornly resisted Japan's attempted encroachment upon that principle, and she only gave way when she knew that further resistance would entail immense suffering and loss to the Chinese people without preventing Japan from attaining her objects. Though China was striving chiefly to protect her threatened sovereignty she also did her best to preserve the rights of the Treaty Powers. When, therefore, the belligerent nations find time to turn their attention to the grave change in the *status quo* in the Far East brought about by Japan, it may be expected that they will find China ready to co-operate cordially in any action designed to restore the equilibrium and to restrain Japan from further predatory adventures.

Apart from the moral aspect of the question, the Treaty Powers cannot afford to allow Japan to shut them out from participation in Far Eastern trade. The process of closing the door was started by Japan in 1905. It was gradually and cautiously carried on until the present year, when Japan considered that the time was opportune for accelerated movement. China's diplomacy has been successful in preventing the complete accomplishment of Japan's aims, for the time being. This much she has been able to do by her own unaided efforts, notwithstanding the fact that a nation lusting for cheap military laurels was browbeating and bullying her. Now the duty devolves upon the Treaty Powers to consolidate the position that China has defended for them, and to make it unequivocally clear to Japan that she will not be permitted to monopolise the trade of the Far East.

PRESENT CONDITIONS IN CHINA

REFLECTIONS OF A HIGH CHINESE OFFICIAL

"China should be spoken of in terms of an agricultural nation rather than one of great manufacturing enterprises," was the manner in which a high and authoritative Chinese official recently expressed himself when speaking of present conditions in his country. As this official is peculiarly situated to gain an intimate knowledge of affairs his remarks should be of general interest.

"The wealth of China lies in her land," he continued, "the cultivation of which has been going on for centuries in a more or less approved manner. The greatest source of revenue to our Government is, therefore, the soil.

"The exports of China have for past centuries comprised raw materials, and the importation of manufactured articles has been the rule. The Government has never been able to encourage agriculture as it should in a practical way. Take for instance the matter of rice planting. In China the law forbids the exportation of rice, not to foreign countries alone, but from one Province to another. This has confined the cultivation of rice to mere local demands. The law prohibiting this exportation was promulgated because of the famines that have often been caused by a scarcity of rice. It has never occurred to the Government in the past that the exportation of this article would increase planting and thereby lessen the chances of an under-supply in case of a shortage in some isolated locality owing to drought or other reasons.

"The lack of proper transportation facilities, however, has made it next to impossible to cultivate the soil to the extent that one would believe it possible. The present modes of communication, excluding the few railways that we have, are far less able to cope with the normal increase of land cultivation than in ancient times. For the past three or four hundred years especially the Government has let the canals and roads of this country become absolutely unusable. In olden days the Hsien (District Magistrate) who kept public works in repair was rewarded, and the merit of an official was determined by his ability to keep up the canals, roads, bridges and all other means of communication. At present in China few, if any, of the public works built by our ancestors are intact.

"Modern facilities for communication, such as railways, will prove of the greatest benefit to this country. Those now operating have already accomplished a great deal. Take for instance the Province of Honan, which can, above all others, be considered an agricultural Province. This is the Province that President Yuan Shih-kai hails from. After the completion of the Peking-Hankow Railway the growth of farm cultivation has been astonishing. In 1902, before the completion of this railway, the exports from Honan, via Hankow, amounted to only $1,000,000, but in five years, say in 1907, the railway carried from the Province of Honan to Hankow something over $32,000,000 and in 1910 Honan exports amounted to $47,000,000. This Province, as I have stated, is purely an agricultural state.

"We have now in China about 11,000 li, or 4,000 English miles of railway, excluding the South Manchuria Railway (Japanese), the Eastern Railway (Russian), the Yunnan Railway (French), and the Kiaochau Railway (German) We have projected the following railways:—Kansu to the Sea (Haichow), Ta-Tung to Chengtu, Kweichow to Shasi, Nanchang to Canton, Jehol to Changchun, and all of these lines are at present being surveyed. The Canton-Hankow, Kalgan-Kweihwacheng, Pukow-Sinyang, and the Hankow-Szechuan lines are under construction. The total mileage of railways constructed, under construction and projected will amount to approximately 33,000 li, or about 11,000 English miles. To be able to handle the products of our country we will have to build approximately 8,000 li more of trunk lines, and about 10,000 li of branch lines. With the above facilities for transportation the agricultural advancement of China will be most noticeable. Among the trunk lines to be built may be mentioned the Chinchow-Aigun railway. Some years ago this country proposed the building of this line with no idea whatsoever of making it a political railway. The negotiations for the undertaking are possibly well known. It will take something like fifteen years to build the railways that are under construction and projected, and we may safely say that the shortest period to be allowed for their completion cannot be put under twelve years.

"In citing the instance of Honan I feel that I will be correct to state that the increase in export and production of this Province owing to railway facilities will be true of any and all other centers of China where the natural conditions prevail for good agricultural enterprises. You must remember that Hankow is something over four hundred miles from the sea, and the fact that other lines will have their termini at the sea will naturally make it easier to build up an export trade. It must also be kept in mind that the Peking-Hankow Railway only drains the produce of three districts in the Province. Railway construction in China is not expensive as compared with the figures we have of other countries. To construct a li of railway in China, less the interest on the invested capital, will approximate $20,000 (per li). For some years to come it will be

more economical for China to build her roads by the granting of railway concessions to foreign capitalists. There is neither the money nor the experience in this country to make it profitable to undertake much railway construction on our own behalf. The basic principle for the success of agricultural developments in China is the increasing of the means of communication. Large areas at present not under cultivation, or sometimes under but very sparsely cultivated, can be turned into vast productive districts as soon as means are afforded for the export of the products—whether domestic or foreign export.

"It is safe to say that for the next twenty years at least China will do but very little manufacturing. The development of industry, while growing, is barely recognizable. During the period mentioned the improvement of purely agricultural pursuits will be the paramount work of the Government. To bring the farmer to a market is the real work of China for some time. Foreign countries at present take a great deal from us. The main agricultural exports can be classed under beans, sesame seed and tea.

"The mining industry in China is in its infancy, and nothing has been done to amount to much. There has never been a geological survey made of the country, and there are at present not enough experts in China to do this work. Last year mining regulations were issued, but some people do not feel that the Government has allowed sufficient participation for foreign capital. At present the foreign capitalist is allowed 50% only, and by law is not given the right to have majority control. Some think that this will discourage the investment of foreign money, but, of course, there is provision for the making of special arrangements for foreign participation. We feel that we should do all we can to encourage money from abroad for the development of these mines. A lack of communication is another reason that more mines have not been opened up to date.

"The Government as yet have taken no steps to develop water power. I firmly believe that this will be made one of the most popular means of Government revenue if properly handled. I know of places in Shansi where our railway engineers say that there is enough power to generate 2,000,000 H. P. The Government have not as yet realised the importance of water power, therefore, up to date, no special interest has been manifested. Personally I feel that this is one of the most important resources that we have to develop. Scattered over the country there are a few mills run by water power in the crudest of forms, and at most a power of 20 h.p. is generated.

"No practical conservation policy has been promulgated beyond the establishment of a Conservancy Bureau under H. E. Chang Chien, which has the definite undertaking of the Hwai River Conservancy in hand. In the past the superstition amongst the people owing to their belief in the 'air and water spirits' has been a reason why the Government have not given more attention to the matter of conservation, and the fact that China hasn't enough money to carry out projected schemes is an added reason for the delay in this great work. We would welcome especially British and American capital in this regard. It may be safely stated that 90 per cent. of the superstition existing in China has now gone.

"In regard to the domestic issue of bonds we were most successful with our issue last year amounting to $16,000,000—in fact it is interesting to note that this issue was over-subscribed to the amount of $8,000,000. We did not follow the methods used in foreign countries of returning the over-subscription but merely increased the original issue to $24,000,000. The new issue which has just been placed on the market amounts to $24,000,000, and we are receiving the assistance of the foreign banks in this matter. The assistance of foreigners has been asked not only to give the Chinese people confidence in our bonds, but to invite foreigners also to buy, thus increasing the general confidence of the public in China's bonds and enhancing the credit of the Chinese Government. I believe firmly that this issue will meet with as much success as our issue of last year. As to the Chinese buying public, I must admit that two-thirds of the purchasers of bonds do so not as a business proposition but out of a sense of patriotism, and only one-third of the public buy these bonds as an investment. Out of the present bonds at least ten millions will be subscribed by interior Chinese and the rest will be subscribed by those in the treaty ports.

"The total national indebtedness of China is approximately two billions of dollars. I cannot give the exact figures without looking them up, and this indebtedness as stated is in Chinese dollars. Up to date there has been no work carried on to figure out the per capita wealth of the Chinese people, and it will be some time before such can be undertaken.

"The political system of China is the Presidential system. We have at present a Council of State, and to this body will soon be added the National Legislature which as yet has not been convened. We will have only one House, or it may be decided that the Council of State remain as the Upper House. At present the Council of State is acting in the capacity of a National Legislature. We have at present a Provisional Constitution, and the Council of State and National Legislature were decided upon through the authority of this Constitution. The President received his powers from the Assembly. The Assembly was formed by the convening of two representatives from each Province and four from the Dependencies. This Assembly was convened in March of last year. Each Province had an electoral body composed of two electors from each Provincial District. These electors in general convention selected the two Provincial representatives who were represented in the Assembly at Peking. The Legislature will be elected by the people but not on the basis of universal suffrage. The voting franchise will be divided amongst three classes of people, and this classification will depend upon three qualifications (1) age, (2) education, (3) property. The number of representatives from each Province will depend upon the population of the Provinces."

SOUTH CHINA RAILWAY SITUATION

Railway development in the South China field (writes U. S. Consul-General George E. Anderson, of Hongkong, on Dec. 21, 1914) has not only been held back by the war in Europe and the effect of the war upon Chinese affairs in so far as new work is concerned, but apparently it has stopped to a considerable extent even the work preliminary to future development. In the immediate vicinity of Hongkong there is practically nothing being done, except in the slow extension of the Canton portion of the Canton-Hankow line, which is being pushed a little farther north all the time, the work being arranged for out of the earnings of the portion of the new road now in operation. The Sunning Railway is also pushing along its further development with funds from its own earnings. About 20 miles of the extension of the road to the sea will soon be ready for rails, and the bridging and other work is being carried along with fair advancement.

In the Yunnan field there has been no development whatever for several months, work having ceased to all intents and purposes before the opening of the war in Europe. The Province as a whole is moribund and in railway matters it is losing much of the benefit of work which has been done in the past. The proposed railway from the French railway at Mengtse to the Kochiu tin mines is still without beginning, though details as to survey and equipment have long ago been worked out and at one time the company concerned had the money for its construction and work was about to commence. The American engineer in charge of the work resigned some time ago and a Greek engineer was employed for a time, but at present the Chinese interests are working with native assistance only. The survey work on the line to Nanning is being looked after in a way by a Chinese party, but without foreign supervision. There is in fact for any of these undertakings at the present time, neither men, money, nor direction. Nevertheless in most of the undertakings the native staffs continue to draw pay.

It is unlikely that there will be any further railway development in south China until the war in Europe is over and international finance is readjusted and also until prospective political troubles in China have been cleared away. Demand for railway material and equipment for roads now in operation in this part of the country is likely to be limited to only that which is absolutely necessary for the operation and reasonable care of the roads concerned.

NEW ANGLO-CHINESE CORPORATION IN CENTRAL CHINA

The negotiations which have been in progress for the past 18 months between the Peking Syndicate, a British Corporation whose Head Office is in London, and representatives of the Chinese Government nominated by the Civil Governor of Honan, with a view to facilitating improved working conditions and extension of operations, have now been brought to a satisfactory conclusion and an Agreement having the approval of the British and Chinese Governments has been signed whereby an Anglo-Chinese Corporation, to be known as the Fu Chung Corporation, is created.

Under the terms of this Agreement the Fu Chung Corporation takes over all the coal produced by the Syndicate and the Chung Yuan Mining Company, a concern embodying all the native mining companies in the locality, and becomes the sole selling Agents thereof. In addition the Corporation is granted the exclusive coal mining rights in the Hwai Ching-fu Prefecture, outside the areas now operated by the Syndicate and the Chung Yuan Company, and further it is given special facilities for the employment of foreign capital in the two Prefectures of Changte-fu and Weihwei-fu, lying West of the Kin-Han (Peking-Hankow) Railway. These privileges are granted to the Corporation for a period of sixty years from the date of the Agreement.

The nominal capital of the Corporation is $1,000,000 and is to be subscribed in equal proportion by the Syndicate and the Chung Yuan Company. The Board of Management will comprise six representatives, three being appointed by the Syndicate and three by the Chung Yuan Company, together with a Director-General and an Assistant Director-General appointed by the Chinese Government and a Special Delegate appointed by the Provincial Authorities, all of whom will be ex-official.

The Syndicate and the Chung Yuan Company will keep their separate existence, each having its own constitution and its own Board of Directors. Each Company will retain the ownership of its properties and will deal as its shareholders may think fit with the proportion of the profits coming to it from the working of the Corporation. Further, each Company will carry on its mining operations within the areas over which it retains exclusive working rights, independently of each other and without interference from the Corporation.

The two Companies undertake not to take up any new enterprises within the Province of Honan which will in any way compete with the Corporation, without first offering the same to the latter.

The advantages of the foregoing arrangement appear obvious. On the one hand it terminates for ever by an international act disputes which the Syndicate have had with the Chinese Government and Provincial Authorities regarding its rights under its Honan Concession and thereby removes the obstructions which up to the present have hampered the proper working and development of the Syndicate's mining operations. It substitutes co-operation for the severe competition which the Syndicate has been obliged to wage with the native companies since it first commenced to produce coal some seven years ago, and it gives security and permanence to the mining industry of the district, which is an essential condition to its exploitation on the most advantageous lines to the country generally.

The coal, the sales of which will now be controlled exclusively by the Fu Chung Corporation, is the well known Honan Anthracite. It is semi-anthracite in character, absolutely smokeless and an admirable coal for all domestic uses. For gas power generation purposes, it is the most economical coal on the market.

FU CHUNG CORPORATION

BACK ROW, left to right, E. W. Fitchford (Chief Accountant, Pekin Syndicate, Ltd.), John P. Kenrick (Agent General, Pekin Syndicate Ltd.), G. W. Frodsham (Asst. Agent General, Pekin Syndicate, Ltd.)
FRONT ROW, Hu Yu Ling (Chairman, Chung Yuan Co.), Chang Chen Fang (ex-Governor of Honan), Yuan Ko Wen (Son of President Yuan Shi Kai), C. S. Woo (President Yuan's office), Wang Ching Fang (Vice Chairman, Chung Yuan Company)

CHINA'S NEED OF AFFORESTATION

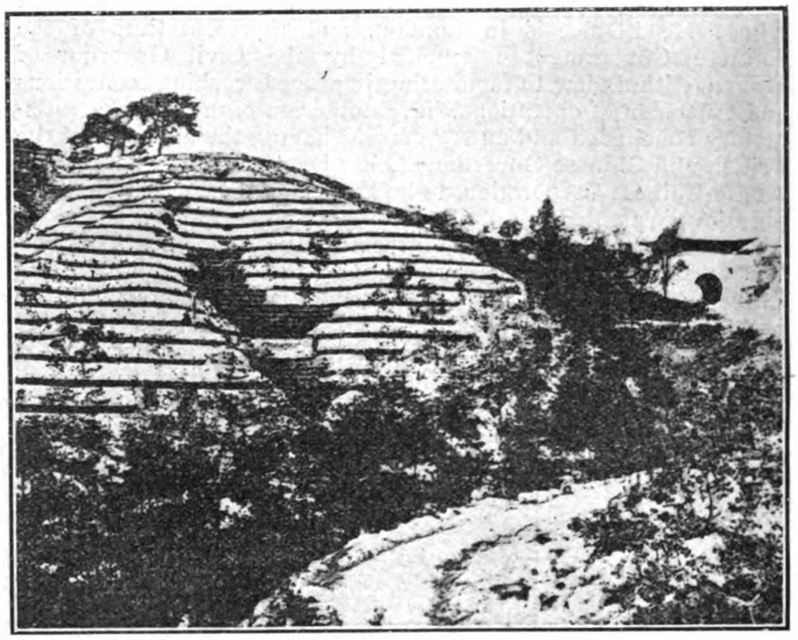
[By W. F. Sherfesee, Director of Forestry, Philippine Islands.]

To the casual tourist, whether he travels by river boat or train, no feature of China is more striking than the treeless mountains and hills which rise bare and naked from the equally treeless plains, and few writers have failed to comment on the lack of forests throughout the greater portion of the country. They note that wood being lacking the houses of the poor are built of dried mud and thatched with grass, and they seldom fail to refer to the fuel gatherers who eagerly rake up the stubble from the fields and the dried grass from the hills to eke out a lamentably inadequate supply for cooking, warmth and other domestic purposes. Most of them, however, fail to consider that the lack of a cheap and abundant supply of wood for fuel and for the purposes of construction is even more sharply felt in the industrial life of the people than in their domestic life, for it is perfectly true that as modern industry is now organized no country, without a very serious industrial handicap, can afford to be without abundant supplies of wood and other forest products. Without wood modern civilization would be impossible, as will be readily understood when we remember that no article whatever, whether it be for use or ornament or for food, shelter, protection or clothing can be produced and delivered to the users as industry is now organized without the help of the forests in supplying wood. An examination of the history of any article, including the production of the raw material and its manufacture, transportation and distribution will, make this fact clear.

The utility of forests in regulating stream flow is also of paramount importance in China, for the forests on a water-shed act somewhat in a manner of a huge spunge, absorbing a considerable portion of water which falls during a period of heavy rain and letting it out slowly during the subsequent drier months. The forests also prevent the washing away of the soil which would otherwise be apt to obstruct the navigable rivers and to cover with sterile gravel the fertile plains. The investigations of the United States Geological Survey have definitely proved that the effect of forests on water-sheds is to reduce the heights of floods and to moderate extremes of low water. One authority states that "it is well within the truth to say that the utility of any system of rivers for transportation, for irrigation, for water power and for domestic supply, depends in great part upon the protection which forests offer to the head waters of the stream and that without such protection none of these uses can be expected long to endure." The other great utility of forests is their effect in fixing sands and loose earth which would otherwise be blown by the winds, as is so commonly now the case in various portions of northern and northwestern China.

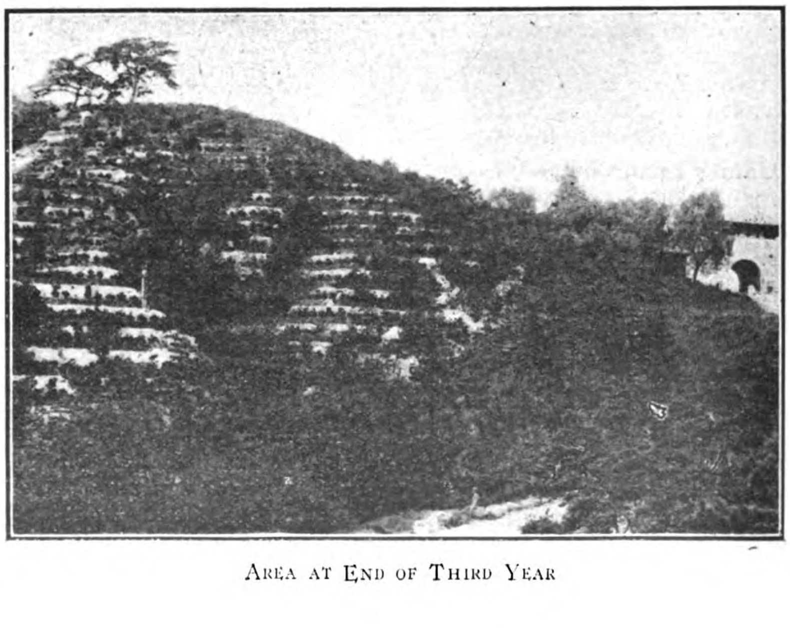
There is every reason to believe that, in its early history, China possessed abundant forests; and it is on record in the Chinese classics that the old feudal nobles maintained a large corps of forest officers and guards to protect the woodlands for the pleasures of the chase; but after feudalism was overthrown in the third century B.C., when hunting gave way to less strenuous pastimes, and when the population rapidly increased and demanded new land for agricultural clearings, the wholesale destruction of forests began and apparently continued unabated until both mountain and plain were stripped of their forest cover; nor did the Central Government take any active steps to prevent the inhabitants from doing in this matter pretty much as they pleased.

While many of the most far sighted leaders of the Chinese people have long lamented the scarcity of forests and have considered means for bringing about at least partial relief, it has hitherto been impracticable to undertake any active measures except possibly on a very small scale. Recently, however, unmistakable signs have become apparent to show that such a condition will no longer be allowed to continue. One of the first projects of this kind to be undertaken, or, at least, one which is destined to be among the most important in its result is the reafforestation of Purple Mountain at Nanking, undertaken by the Chinese Colonization Association, with Professor Joseph Bailie, of the University of Nanking, as the active agent.

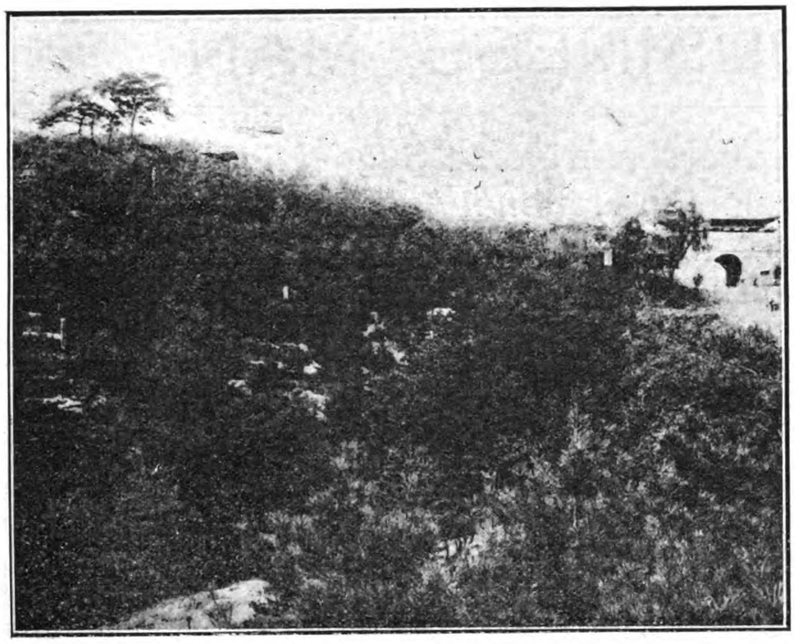


Afforestation in Chosen Showing Method of Planting and First Year's Growth

Second Year's Growth



Area at End of Third Year



Fifth Year Showing Hillside Fully Covered by Forest Growth

Mr. Bailie's interest in reafforestation is a natural outgrowth of his work in relieving famine sufferers in the city of Nanking. Instead of distributing relief in the form of money or food he found it desirable from every point of view to furnish well paid work instead, and his attention was naturally directed to the extensive slopes of Purple Mountain lying just outside the city walls. Through the help of influential Chinese in Nanking and Peking, permission was secured from the Government to use the land on the mountain, and Mr. Bailie thereupon proceeded to reafforestate or otherwise to utilize such of the land as was suitable for his purposes. The good land at the base of the mountain was put to agricultural use, land higher up was used for the growing of fruit trees which have been shown to flourish in that locality, and much of the land which remains has been planted with various species of forest trees.

Such work has naturally had far more than local influence and steps are now being taken in various provinces to form similar associations and to inaugurate similar projects. A large percentage of the land now lying idle throughout China is owned by the Government, but legislation exists by which private individuals or companies can acquire the use of it under very simple and generous terms. It will probably not be practical for the Government, at least for several years to come, itself to undertake reafforestation on a very extensive scale; but it can, and doubtless will, encourage private individuals to do that work for themselves. The general objects to be striven for are simple and clear in order to enable each acre of land in China to be put to its most profitable use. It is obvious that agricultural land now lying waste should be put under intensive cultivation; that the idle lands on the hills should be planted with fruit-trees whenever soil and climate are suitable and when there is a profitable market for the fruit; and that the steep crests of the hills and mountains and rocky slopes should be made to bear heavy forests of the most profitable kinds of wood. Forest planting fortunately is sufficiently profitable to induce private individuals to take up the work as a business investment, and this is especially true under the conditions which we find in China, for here labour is abundant, remarkably cheap and highly efficient with proper supervision and training; a greedy market exists on the ground, thus difficulties of transportation are avoided; and the land now lying idle can be secured at nominal cost. On account of the heavy demand for fuel and for small round timber for construction purposes it is not necessary to wait for a long period of years before the newly planted forests begin to produce returns.

It is possible, under these conditions, to employ a short rotation instead of waiting for the production of large trees necessary to yield saw-lumber. Even under comparatively adverse conditions so far as labour, cost and transportation are concerned, forest plantations have proved a decidedly profitable investment and their increased profitableness under the exceptionally favourable conditions we find in China is therefore apparent. That the soil and climate are excellently adapted to forest growth is proved in the most conclusive manner by the presence of young trees scattered almost everywhere over the bare hills and mountains which only need a chance to grow in order to produce fairly good timber. Among these species are oak, maple, chestnut, hack-berry, pine, willow, ailenthus, elm and many others. There are also found trees of pear, persimmon, cherry, peach, etc., but the unceasing activity of the searchers for fuel seldom gives the young trees a chance to develop into more than very small shrubs, although in a few localities fairly extensive forests are found.

In any forest work in China one of the first requisites is of course protection both from fire, and, which is even more important, from fuel gatherers. That this involves a certain amount of difficulty no one will deny, but that the problem is by no means beyond practical solution is proved by the success which has attended such efforts in many localities which the writer has had the opportunity to visit.

Those who have been most active in the inauguration of the forest work in China have realized that it is the young generation to which the country must look for the work of actually putting into effect the policies which the older and more experienced men may formulate, and to meet this need there has recently been opened a Forest School in the University of Nanking. Seventeen students have matriculated in the course; of these six come from Tsingtau, where they formerly studied forestry under the German regime, five hold scholarships from the Provincial Government of Anhui, three are sent by the Governor of Shantung, and three more hold scholarships from the Committee of the Famine Relief Fund. Four other Chinese students are studying in the Philippines and will return to their home country on completion of their studies.

While the work which has so far been completed, or which is now being carried on, is extremely small in proportion to what should be done and what will undoubtedly be done in the future, still a start at least has been made, and we can reasonably expect that from this time on the work of forest reafforestation in China will proceed with constantly increasing momentum.

CHINA'S RAILWAY FORESTS

The Ministry of Communications has achieved considerable success in the work of afforestation along the Kin-han Railway Line. The Director of the Tientsin-Pukow Railway has submitted a petition to the Ministry recommending that similiar steps be taken along this Line. He says that the places in the vicinity of Ku Chen, which is extensively interspersed with mountains and hills, provide plenty of scope for the work of afforestation. Only a small amount of money is required for the enterprise, but the profits accruing will be a very large one. His project has been approved by the Ministry and an official has been appointed to proceed to commerce the work.

AGRICULTURAL EXPERIMENT STATIONS

The Minister of Agriculture and Commerce, Mr. Chang Chien, has reported to the President on the results of his inspection of several experimental stations visited by him in the course of his journey a few weeks ago from the capital to Nantungchow. He found good in progress at the afforestation stations at Changchinghsien in Shantung, at the cattle-breeding stations in the valley of the Shaochi Ho in the Fengyang district of Anhwei, and the forestry station on Purple Mountain at Nanking. On arriving at Natungchow the Minister selected sites for experimental stations for cotton cultivation. A site needs to be chosen also for experimental work in sugar cultivation in Kiangsi, a matter into which the Minister will enquire further in due course. Along whole line of the Tientsin-Pukow Railway there is need for considerable afforestation work, and such work would not only greatly ameliorate the lot of the local inhabitants by increasing their wealth, but would also prevent the serious danger of wash-outs by which the railway is periodically threatened in the rainy season. The Minister further reports that he has signed a preliminary contract for the purchase of 500 head of merinos, to be imported into China in healthy and good condition, for breeding and experimental purposes.

THE CHINESE BUSINESS MAN

The Disabilities under which he Labors, and Some Suggestions for his Employment in Developing National Affairs

(By R. S. A.)

There has been no time in the history of China when the nation and its people have been put to such a severe test as to their competency as that which has elapsed since the inauguration of the Republic. The world welcomes the thought of some day having this great country admitted into the family of nations on an equal footing with the other great powers. It may be the desires of the few to have China kept in subservience to the dictum of the West, but the majority of the people in Europe and America would far rather see this nation able to stand unaided if only for the reason that stability and protection would be given to the life and property of the Occidental as well as of the native, and those interested in the development rather than the exploitation of China would be thereby encouraged to invest their capital in the many avenues which are available in the country.

During the Manchu regime the Chinese people were stirred to take action against the reigning family of aliens and thus effected their complete overthrow. With the inauguration of the Republic thousands of the poor Chinese who had lost friend and relative in the struggle for independence entertained hopes of the establishment of a Government maintained by popular representation. The first two years of the Republican regime soon showed that the people did not possess the foundation necessary for the building up of a popular Government, and the attempts of the many radicals among the reform element merely instigated rebellion throughout the country and at one time chaos reigned supreme. President Yuan Shi-kai has been harshly criticized on account of the abrupt manner in which he ousted the so-called Young China Party. The President might have been able to have brought about peace without the use of the drastic measures adopted by him, but this we need not discuss—the fact remains that his objective was the restoration of order out of chaos, and this has to a great degree been accomplished. Peace only can be the basis of commercial and industrial development.

During the Revolution of 1911 the Chinese business man was the individual chiefly taxed for the upkeep of the armies in the field, and it was the business man who was left in the various towns throughout China to direct local affairs during the interregnum. The losses incurred as a result of the Revolution fell more heavily upon the merchant than upon any other class, and he bore them willingly, believing that the success of the Revolution meant a greater opportunity for fair play—all that the merchant the world over cares for.

When Hwang Hsing and his disgruntled followers launched the Second Revolution in 1913 the business man was again asked for assistance, but this time the revolutionist was disappointed. The merchant knew that the quarrel was of a personal nature. He had paid for the first Revolution in the hope that the Revolutionary Party would really undertake the regeneration of the nation rather than spend its time devising methods for self-advancement regardless of the feelings of the people. The merchant felt that he had been robbed and his kin had been killed merely for the prosperity of a few hot-heads of no especial ability. He refused to give financial assistance, and for this reason the Second Revolution became an almost immediate failure.

The Chinese are characterised by their intense love of peace, and predominant among those voicing this sentiment are the business men scattered over the country. They know that in peaceful times only can business thrive, and they are willing to support any administration that will insure an undisturbed peace. The Central Government should be grateful to the army that suppressed the revolutionists of 1913, but more especially should it show its gratitude to the business man throughout the affected areas for his refusal to assist in any way the overthrow of what to them seemed a Government desirous of affording peace to the people.

The backbone of every nation is the great middle class, and it is this class that has been able to build up the most stable governments of the world. China has been ruled for centuries by a scholastic aristocracy. It should be kept in mind that even during the reign of the Manchus it was the *Chinese* officials who really controlled China. The Revolution of 1911 while in name being directed against the Manchus was in fact directed against the gross misrule of the Government in which old-style unprogressive Chinese participated to the extent of having something over ninety per cent of the total number of officials in the country. This scholastic aristocracy has been maintained for centuries by the people. In their capacities as officials or heirs to vast tracts of lands they have constituted a canker that has fed idly upon the prosperity of the people, who patiently submitted to oppression.

This abnormal patience which is a characteristic of the Chinese has been to people of the Western world a matter for wonderment. The Taoist religion of "drops of water wearing away the stone" has been truly carried out in China. The Revolution of 1911 found the people of China in a state of lethargy. The radicals became active, and soon the sleeping thousands joined the attempt to free themselves from the oppressive rule of the scholastic aristocracy. The only fear that we entertain at present is that the people during 1911 were not sufficiently roused from their centuries of slumber to really accomplish the necessary regeneration of China. The farmer and the business-man, however, suffered the pains of the first Revolution, and for two years thereafter were browbeaten and drained by the multitude of new officials that sprang up like mushrooms all over the country. The great middle class desired to do something constructive, but they were kept in the background by the early civil and military authorities of the new regime. Those who developed agriculture and commerce acted as the financiers of the Revolution, but they were not permitted to take any real part in its administration. This, undoubtedly, is the reason for the complete failure of the new party. The rural population and the merchant classes had it borne in upon them that they were regarded as merely the pawns in the game, and they gave up all hopes of trying to accomplish anything tangible. To them it seemed as if Yuan Shi-kai would be able at least to give them peace sufficient to enable them to carry on their business, and the desire for peace was the basis for their refusal to render assistance to the *rebels*.

It is now the duty of President Yuan Shi-kai to realise for once the great force of the middle class in China. It is this class that has kept him in his place as President of the Republic, and he owes them a debt that can only be repaid by giving them a part in the administration of the nation which is, to a great degree, maintained as an entity through their efforts. The appointment of two or three so-called business men in the Tsan Chung Yuan is not, however, sufficient proof of his gratitude to the merchant class. This is of no avail. It is high time that those in China who need protection the most were given a voice in the methods to be adopted for their protection. The maintenance of a scholastic aristocracy in China's officialdom can only mean the gradual return of the Government to the mal-practices of the Manchu regime.

In discussing Chinese matters the average person hailing from Europe or America asks if the native is really competent to effect his own salvation. The foreigner has been accustomed to cite the Japanese as being the only nation in the Far East

capable of developing the reforms necessary for the maintenance of a stable Government based upon the approved methods of the West. Chinese officials have been regarded the world over as a most impractical class, a statement which it is, in general, difficult to refute, since the officials of this country have not been trained in an atmosphere conducive to the acquirement of the practical ideas which virtually constitute the inheritance of the great middle class over which they rule. The people want men in high offices who know of their needs as a result of experience. In looking into the composition of the Governments of the West the great part the business man and the farmer play in national politics is quickly discernible. While it is the great lawyer class which is represented in the two houses in the United States their seats are secured because they represent the interests of the people. It is the farmer in the Southern part of the United States who sends Congressmen and Senators to Washington, and the men who are so sent are men who have been trained to know the needs of the locality they represent. In China this great middle class must have representation or China will not and cannot advance. If the people who are the life of China do not have a large share in the control of the nation then we need never expect to see China keep pace with the times.

The influence of official pressure in the past has had the effect of creating in this country a class that may be called the business-aristocracy. With the oppressive measures adopted by past Governments the business man has been forced to employ means to check as much as possible the interference of the official in the business of the individual. To accomplish this he has set to work to create a body of men in his locality who should at all times act in the capacity of middlemen between the official and the business man. This body goes under the name of the Chamber of Commerce. The knowledge the average foreigner has of Chambers of Commerce in China is very limited. Each craft in China has its own guild, and each guild is supposed to have a representative in the Chamber of Commerce. The original idea is excellent and most commendable, but the Chambers of Commerce in the interior of China have denegerated to the point of being nothing more than official organizations, and are composed of a few of the leading local capitalists and scholars. The Chamber of Commerce, in fact, has become an additional burden upon the business man in the street rather than a help.

When a District Superintendent takes office in a town the first step taken by him is to win the confidence of the Chamber of Commerce, which really controls the town. Long since the Chamber has ceased to be the champion of the business man. It has been transformed into an organization which concocts with the local officials means whereby the people may be made to carry out plans which will enrich the official as well as the members of the Chamber of Commerce. The official is told what he may do, and the business man is told by the Chamber of Commerce what he must do. If the incoming official in any way crosses the purpose of the chamber he is at once denounced, the people being instigated to this action by the Chamber of Commerce. The official is then either removed or promises to mend his ways. A few of the local men of wealth have become the Chamber of Commerce, and the body, therefore, has of recent years had only one motive and that has been the protection of their own individual interests at the expense of those whom they are supposed to represent.

The business man in China consequently has two great obstacles in his way: (1) the scholastic aristocracy, as represented by the official class, (2) the business aristocracy as represented by the Chambers of Commerce. The first class do not know the needs of the business man, and the second class, though knowing the needs of the business man, use their every effort to exploit him for selfish interests.

This, at any rate, has been the past history of the difficulties of the merchant class. In other words, the merchant has not as yet been able to secure the support from the Government that he deserves. He has been kept under the heel of the official, and has been made to appreciate that the only thing in life that he may expect is the retention of sufficient of the wherewithal of life to feed and clothe himself Big business enterprises are, therefore, rarely undertaken successfully. The launching of such would at once call for the interference and participation of the official and the Chamber of Commerce, and the upkeep of these leeches would render any concern bankrupt in a very short time. The constant changes among officials and the members of the Chambers of Commerce also mean that no policy for the undertaking of big business could be definitely formed. We could cite hundreds of instances where combinations of capital for the establishment of large industries have been effected, but the combinations have been soon suppressed by the continual drain made upon them by the officials.

There are two classes of Chambers of Commerce in China (1) the Chamber of Commerce of the interior that we have just described, and (2) Chamber of Commerce of the Treaty Port. In the Treaty Ports, such as Shanghai, Hankow and Tientsin, the Chambers of Commerce are largely made up of Chinese who have derived their wealth from the export and import trade. The protection of the Chinese in their enjoyment of the profits accruing from foreign business is the main object of the Treaty Port Chambers. In the past the Shanghai Taotai used to be the tool of the men who composed the Shanghai organization, and he annually received no less than two million taels in his capacity as Taotai. This official with the support of the Shanghai Chamber of Commerce used to possess very strong control of all of the bodies along the Yangtse, especially affecting Chekiang, Kiangsu, Anhui and the southern part of Shantung, with the eastern section of Honan. The word of the Shanghai combination even now is practically law, and invariably a Chinese representing a foreign firm in the interior secures from the Shanghai Chamber of Commerce his credentials, which are presented to the local official in the interior.

China has been known to the world as a nation of shopkeepers. These shopkeepers, as they are called, have been held down to this title by the Government and the Chambers of Commerce. But there is still another agent that has assisted to keep the shopkeeper in the clutches of the business aristocracy, and that is the native bank. There are but few banks not controlled by the business aristocracy, and the bank manager and other employees are merely personal representatives of certain members of the business aristocracy. The business of the shopkeeper is carried on through these banks, and the rates of interest imposed are crushing to a degree. The poor individual merchant has all that he can do to keep afloat unless his shop is also owned by the man that runs the bank, a condition which makes the native banking system of China one of the several baneful influences working against business prosperity. The system, as has been pointed out, is merely an added reason for the failure of the business men to co-operate with one another in the establishment of large enterprises. They cannot do so because they are not possessed of proper banking facilities.

In China the Government is everything and in everything. This participation, whether direct or indirect, is productive of the same results. What the business man needs is freedom to develop under the protection of the Government, and protection is what the government has to provide to establish a basis for the commercial and industrial advancement of China. The Government will have to draw many of its officials from the business class that understand the needs of the country, and such a selection for various positions in the State must not be made from members of the business aristocracy, but from the business people themselves.

The Ministry of Commerce and Industry should strive to secure the ability that is available in China and which is specially fitted to carry out the necessary reforms. This can be done and should be done. When a member of the business aristocracy is called upon to do this work no advance can be made. Such an individual invariably has pet schemes of his own, and generally he uses his position to carry them out. A man interested in a cotton mill will, if he is from this class of Chinese, merely use his position to afford protection to his own interests, to the exclusion of all other interests. In numerous instances we know the Ministry has been used in the past to further the interests of certain individuals rather than to develop the whole for the people. This practice must cease, for the people will never gain confidence in a Government institution known to foster private interests.

In dealing with the Government side of the matter first it must be seen to that the business man is considered, and does have a part in the formation and carrying out of all plans affecting his welfare. The Ministry will have to set to work to secure closer touch with the real factors in the development of China along commercial and industrial lines. This the Government cannot do by resorting to the various Chambers of Commerce for assistance, it must be done by developing a direct relationship with the business masses. We have tried to point out that all business undertakings on a large scale have been doomed to failure because of the interference of official China, and not because the people have lacked those qualities of combined effort so important to the success of any and all extensive enterprises. Of course, the characteristics of the Chinese race, as compared with those of the West, have not been developed along the lines of co-operative effort to the extent we find this trait in the European and American. The religion of China as exemplified by Confucianism has made the family tie its main object, and with this comes the clannishness for which the Chinese people are noted. China has been made up of many families in her business world rather than many individuals co-operating in one great enterprise. The property and wealth of a family have been kept not by the individual but by the family as a whole. This estate, handed down from one generation to another, has been the means of livelihood for the family, and it has been administered by the family. This in itself has had a depressing effect on all co-operative undertakings. But it is a feature among the many difficulties that will, in our opinion, be the easiest to remedy.

The Government's duty is, therefore, to afford protection to the merchant class and to encourage co-operation of ability and capital. The Government should not demand participation in any enterprise simply because it attains a certain degree of success, and it should not use its influence to assist one individual or a collection of individuals in one business undertaking to the detriment of another individual or combination of individuals in any other undertaking of the same nature. The people should be made to realise that they are free to develop not with the participation of the Government but merely with its protection. We will cite more definitely in this article means that should be employed in this work. Suffice it to say at this juncture that the people have no confidence that the Government will protect anything unless it participates in the profit. This attitude of the people towards the Government must be overcome.

On their part the business men of China should combine for the development of their country. They should take measures to throw off the oppression imposed upon them by organizations of their own creation that have existed merely at the expense of the merchant. The local business man should at once set to work to take an active part in the government of his own community in which the powers are now in the hands of the business aristocracy. These organizations will have to be replaced by bodies of men elected by the merchants for a certain period of years. It is of paramount importance that a period of years be determined, and that, say, at the end of such period at least a majority of members must be ineligible for re-election. It is vital to the interests of the commercial class that another aristocracy is not built up in place of the one existing at present. The merchants should combine in the undertaking of large commercial and industrial enterprises, and the Chambers of Commerce should be made to assist these combinations. The Chambers of Commerce should constitute Development and Information Bureaux rather than semi-official bodies in control of the merchants. Granted that the Government affords its protection to the people—the people must look out for themselves. Local Chambers of Commerce or Development Bureaux have a very wide field for investigation and study. They should be the medium for all information on all lines of commerce and industry, and a competent staff should be employed to furnish any information required by the merchant or capitalist in the inauguration of any enterprise. In a bean oil centre the Development Bureau should make a study of this trade so that it would be enabled to give those interested any and all data that may prove of commercial value. The formation of Trade Development Bureaux instead of Chambers of Commerce would at once prove most effective. The Government could guarantee the protection necessary, and it would then remain with the business man to improve his own line of enterprise.

The greatest enemies the Chinese business men have had to deal with in the past have been (1) the Government's interference, (2) the business aristocracy, (3) foreign firms, (4) treaty port Chinese merchants. We have reason to believe that the Government at present sincerely contemplates the freeing of the business men from Government interference and forced participation. As has been pointed out it is now incumbent upon the Government really to organise its Ministry of Commerce so that it will be of material assistance to the greatest and wealthiest class among its supporters. We have touched upon the business aristocracy, and have suggested a way out of the imposition of this burden upon the business man. It is obvious that those who are the financiers of this great body of business aristocrats can certainly withdraw their present support, and in their stead create a select organisation for the substantial furtherance of trade interests in general.

China needs the assistance of foreigners, but it does not need their domination whether in politics or business. Ever since 1720, when the Cantonese merchants initiated the Co-hong system, the foreigner has steadily kept all business control in his own hands. Of course foreign capital has been mostly employed and the foreigner rightly feels that he should be allowed to be the one in control. Granted that this is fair—it is certainly not fair to China that the Chinese business man should acknowledge that he must take second place to all comers, and made no attempt to take a lead himself. It is training that the Chinese need most, and the only way that the necessary education in modern business can be had is for the Chinese to create companies to participate in handling the trade. If foreign experience is required the very best available in Europe and America can be obtained by paying the price. The twenty-one demands made upon China by Japan are not half so serious as the gradual increase of Japanese control in China's trade. The opening of treaty ports to foreign trade has always been the result of compulsion by Western nations, and in each of these ports, which as a rule are natural trade centres, it is the foreigner who is in control of the trade. There have been nearly thirty centres opened as a result of the demands of Japan alone, and with the opening of more ports by the recent demands made upon China the results will soon become obvious. The big business in the hands of the Japanese in some fifty places in China gives Japan a hold that it is difficult to shake off. It is time that the Chinese started the creation of large enterprises for themselves, and made their own trade centres where they could dominate as Chinese, and not under a Japanese flag

The Government cannot afford to overlook the necessity of providing adequate protection to the business man and giving every encouragement in the power of the officials to business men to induce them to work for the salvation of their own country. This section of the Chinese population has been willing to work for the foreigner because it has had the protection of the foreign flag, and the merchants of China will not dare to undertake big business on their own account until the Government satisfies them that they will receive the necessary protection to build up large institutions.

Up to the present the only Chinese organizations that have had a semblance of success without Government support have been those concerns that have had their birth in the foreign settlements of the various treaty ports scattered over China, and the reason for their success can be attributed solely to the fact that they have been fostered under the protection of the foreign flag. In the various treaty ports have sprung up a class of Chinese merchants known under the name of *Compradore*. This class of native merchant has not in all cases been what it should have been to the nation; that is, being a class that has come into close touch with foreign methods it should have come out of the treaty ports and given China the benefit of its knowledge. Among the compradore classes will be found many who abuse the position they have secured under the foreigner merely to exploit and browbeat the interior merchants. The organizations under the control of this class in the treaty ports carry their influence, as has been stated, into the interior for some distance, and this influence has in a great percentage of cases worked to the disadvantage of the interior business men.

The compradore class owe something to their own country, and in this time of need for men experienced in foreign business systems and methods they should come to the help of their country. The safety afforded the average man in the treaty port who undertakes to carry on any commercial or industrial enterprise should also be given by the Chinese Government to the same degree when any attempt is made to do the same work in the interior. After all, it is the protection secured under the foreign flag that has kept this class in the treaty port, and it is incumbent upon the Government to prove that the same protection can be assured all who undertake the building up of commerce and industry in whatsoever district in the rest of China.

The development of native organizations will affect the investment of foreign capital in no way other than to encourage an increased participation of money from abroad in this country. A Government that can maintain laws and give security to native enterprise, will, at the same time, induce the foreign capitalist to come. No one would welcome Chinese organized effort more than the American or European business man, for in this he sees hope of selling more than ever before. The Japanese do not possess the money to organize a Company in China, as they have proposed doing time and again, to undertake development work on a large scale, but they have the organizing ability, and their laws for the protection of the merchant are enforced, and for this reason—and this reason alone—they are able to secure the money they need in not only developing their own industries but those of China. This money comes from America and Great Britain, and the same money could be had by China from these two countries were China to show that she is capable of organizing, and the Government able to afford the requisite protection.

In the recent demands made upon China by the Imperial Government of Japan is seen an extensive commercial and industrial program in China on the part of the Japanese. This program will be carried out with American and European capital, and it will not be surprising to find more actual Chinese capital employed in their future developments than Japanese capital. It is not that the Americans or the British care more for the Japanese than the Chinese—they do not. In rare instances can a British merchant or an American be found but who will shrug his shoulders when mention is made of the Japanese. It is not so with the Chinese—the Chinese merchant is liked and respect is held for his business integrity, but it is known that the Chinese is afraid to invest his own money outside of a treaty port, and, therefore, has no opportunity for organization.

It is now the duty of the Government to see to it that things are otherwise. In the great encroachment made upon China by Japan as a result of the recent demands it will be the business man of China and of Europe who will suffer, and the best way to assist both is for the Government to formulate such laws as will encourage commercial activities upon the part of the native. As soon as the Central Government will come to the help of its own people in this respect it will find China's position as a first class nation secure. The Chinese should bear in mind that all the Americans and British want in this country is a stable Government for the advancement of trade, and the prosperity of the Westerner in business will be in proportion to that of the Chinese. The American and British Governments do not for a moment intend to enter this country with the idea of seizing territory to build up trade as in the recent instance of Japan, and as long as the Chinese people themselves are left free to organize, the American and European will feel that they have also been materially benefited.

In this connexion it is well for the Government to look seriously into the methods to be adopted for the benefit of the Chinese business man and native capitalist. It is a very large proposition, and cannot be too hastily treated. It would be well for the Government to invite leading American and British business men to come to this country and assist in effecting some scheme for the Government that will prove helpful to the business masses. It is suggested that the leading business institutions of these two countries be invited to suggest names of those considered most competent to undertake this work, and that these men be brought to China at as early a date as possible actively to assist the Government.

The Government of China has been most negligent in its work of education, and this will reflect very seriously upon the commercial and industrial advancement of the Republic. In China there are very few schools that really receive the hearty support either of the people or the government. In a commercial or industrial awakening the school will have to play a very prominent part. In this time of scientific business management the school has its duty to fulfil. In China's industrial future the technical side of the education of young Chinese must be looked after very attentively.

In Japan the person who promotes an electric light company is able to secure enough experts amongst the Japanese to carry on the work. These men are educated in Japan, and the Japanese do not depend upon their foreign educated men to do this work. China will not be able to educate enough men abroad to accomplish a tithe of the work necessary, and it will be following the dictates of wisdom if the Government will find means in China for the education of her young men. The matter of education cannot be urged too strongly. If the desire of the people is to keep the control of the country in their own hands then they must prepare themselves to take over the work that otherwise must necessarily fall into the hands of the foreigner.

In the matter of education it is not expedient that the Government, with its heavy financial responsibilities, at present should open schools on a *wholesale* scale. The trouble in the past with Chinese school systems has been that numbers instead of quality has been the main feature. It would be well for the Government to maintain at present in Peking a very high grade technical school, and this school should be fed by the various institutions scattered over China, whether under native or foreign control. It is necessary that men with sufficient training be raised before the work of opening schools over the country be undertaken. In the present institutions there are many in which the Government could maintain technical departments, and it would be wise for the Government to do this in the various Provincial Colleges that have at present competent teachers and in the higher grade missionary schools.

The institution in Peking should be a graduate school under the direction and instruction of the very highest grade of men obtainable from the West. In such institutions as St. John's University, Soochow University, Nanking University and Canton Christian College there could be maintained various departments for developing technical work. The Government, without entering into great expense, could endow chairs and furnish the necessary equipment for such departments.

The foreign missionary institution can be used to great advantage, and this should be done. There is nothing in the Christian religion that will prevent a man from becoming not only a good Chinese citizen but a high grade engineer. These schools above mentioned draw from the best classes of the population, and there is no doubt but that a very great percentage of the student body would elect to take technical courses. After graduating they would be sent to Peking to undertake post-graduate work. The Japanese have used foreign missionary endeavour and the Chinese can do the same.

In Japan commercial schools are found over the whole country, and these schools have turned out numbers of very competent young men who have been employed in the various commercial houses in the country. It is necessary, too, that the Government of China should at once take advantage of the opportunity afforded by the schools in China to establish courses in commerce. It is proposed that all institutions selected for the purpose of carrying on commercial and technical departments should be those in which English is taught. It is very necessary that English be employed in order that the student may, during his course of study and after leaving college, have access to all the literature that is necessary for him to keep up with the development in his chosen profession. The men whom these schools turn out will in the near future be the men who will produce the teaching force for schools that are confined to the use of the Chinese language, and they will also be the men who will furnish the literature in Chinese that is necessary for the student and graduate.

The Minister of Education would do well to select from the present schools in China the names of those who possess the highest class of ability, and then appoint a committee to go to the

various schools for the purpose of consulting with the President and Faculty of each in regard to the formation of commercial and purely technical courses. There is little doubt but that the institutions so approached would be more than glad to have the Government assist them in the work. The only control that the Government would desire would be the opportunity of knowing that the schools so selected kept up a high grade course, and that the requisite equipment was maintained for the work. The above suggestions have been made in the hope that the Government, seeing the absolute necessity of educating her younger men, will be able to have some scheme to consider in undertaking the work.

It is incumbent upon the business men of China as well as the Government to look seriously into this matter of education, and to assist the Government financially and otherwise in carrying out some workable scheme. In the many cities of China it would be a simple matter for the business men to raise sufficient funds to establish night schools and day schools for the better education of the young men at present engaged in business. In these schools lecture courses in business and its various branches of banking and accounting will prove of the greatest help. Take a city like Peking—the merchants of this city could easily maintain several schools of this kind, and foreigners from America and Europe could be secured to carry on the work. It would be the easiest matter in the world for the merchants in Peking to maintain an expenditure of say one hundred to two hundred thousand taels a year for this work. More than this is being wasted otherwise.

Modern business institutions cannot be built up on the native banking and accounting systems that have been in vogue for several thousands of years, and the matter of educating the people to an appreciation of this fact must be undertaken. At present the native system of banking has, as has been pointed out, a most depressing effect upon the business of China, and, in no less a degree, the disorderly method of accounting. It is next to impossible for one properly to audit the accounts of a Chinese store, and the word of the Manager must be accepted as final. It would be useless for the Government to promulgate laws regulating the forms for accounting and the proper auditing thereof without the people first being taught the necessity of this reformation and the manner in which it should be carried out.

In business, as in politics, a few of those who have learned the necessity of reform have attempted to force reforms upon a people who do not understand them and merely consider innovations to be an added means on the part of the Government to interfere with the freedom of the people. The Ministry of Agriculture and Commerce has now the duty of educating the people, rather than the work of promulgating laws. A law cannot be adequately enforced in any country unless the people are in sympathy with it.

The education of Chinese business men is the first duty of the Ministry, and every means at hand to encourage this work should be made use of. The Chambers of Commerce throughout China, as well as all schools of a middle or higher grade, must see to it that the business education of the younger Chinese is not neglected.

Foreign capital will not come into China with a feeling of security until the old order changes, nor will Chinese capital be forthcoming unless the Government and the people reform their present systems. This reform can only be carried out by a systematic effort upon the part of the Government and the leading merchants of the nation to educate the people to the necessity of modern organisation. The instance of Japan has been given in the above paragraphs to show that this is to China the most vital work to be undertaken. The Government cannot do it alone, and the assistance of the merchant and banker is necessary to success.

The Government has no doubt come to the realisation of Japan's true ambition in China, and to-day more than at any other time, has this nation been made to feel that Britain and the United States rank foremost among the friends of China. The Government fully understands that for some years the people will not be able to handle all of the large enterprises necessary to the normal development of the country, and for this reason foreign capital and ability must be sought. It would be well at this time for China to strain her every effort to get into a closer touch with the American and British business man and capitalist, not only for the furnishing of capital and the managing of large undertakings, but for the teaching of the Chinese to organize and develop. The stronger the commercial ties between China and the two nations mentioned as her friends the greater will be the chances of China to remain an independent nation. In every instance where Japanese have taken hold in China there has been created monopoly for the Japanese merchant, and as a result the spheres of influence under their domination are gradually becoming Japanese territory. In the history of Great Britain in China this has not been true, it is proved by history that wherever the British flag has gone equal trade opportunities have been given all nations. The same holds true in respect to the United States, and since these two nations have not only determined upon the preservation of China as an independent nation, but have actually proved to the satisfaction of all that they have exerted themselves during the recent Japanese demands in favor of China it is wise that President Yuan Shih-kai should take note of these facts and encourage British and American influence in this land.

In both the United States and England it has been the merchant class that has been aroused to strong appeal to their respective Governments to protest against the piracy of Chinese trade by the Japanese, and this fact is appreciated by the Chinese merchant. The Japanese merchants in China would have no place were it not for the pressure brought to bear upon the Chinese Government by the Imperial Japanese Government. In the organization of the Sino-Japanese Industrial Company it is noticeable that the native merchants have not cared to have anything to do with it, and that the Government of China alone is responsible for the establishment of this enterprise. It is high time that this Government refused to give away commercial and industrial opportunities as the result of an exercise of force upon the part of some alien nation. The proposed Sino-Japanese Company would die a natural death if it depended upon the support of the Chinese merchants. It is impossible to conceive either Great Britain or America presenting China with an Ultimatum upon her refusal to allow American and British monopolistic advantages in trade as was done in the instance of the action taken recently by the Imperial Government of Japan. The Chinese Government and the merchants of China should keep in mind that the main supporters of Chinese integrity are American and British merchants, and to this class in the two friendly nations China should appeal for help in the development to be made.

The integrity of China will depend upon the ability of the Chinese not only to organize their government but their commerce and industry. The encroachments made upon China by Japan have been with the sole purpose of organizing Chinese trade under the Japanese flag, and this can be done and will continue to be done as long as the Chinese are either unwilling or unable to organize for themselves.

INDIGO CULTIVATION IN SHANTUNG

In by-gone years, China produced a considerable amount of indigo. In Shantung, up to the beginning of the Kwanghsu Era, nearly six million taels worth of indigo was raised every year at Taian, Laiwu, Hsincheng, Changshan, Lintzu, Licheng and Changchiu. But when dyes commenced to be imported from foreign countries in later years, demand for the native product having wholly disappeared, the cultivation of the indigo plant was reduced from year to year, until now no one undertakes to raise it.

In view of the fact that the price of dyes is advancing with the progress of days ever since the war broke out in Europe, the importation of the same being entirely suspended, the Governor of Shantung is eager to see the culivation of indigo revived in his province. He is not only persuading the local people to undertake the industry, but has given instructions to various district magistrates under him to issue official letters encouraging the cultivation of the dye plant, and likewise has suggested agricultural societies of the province to lecture on the advantage of the industry.

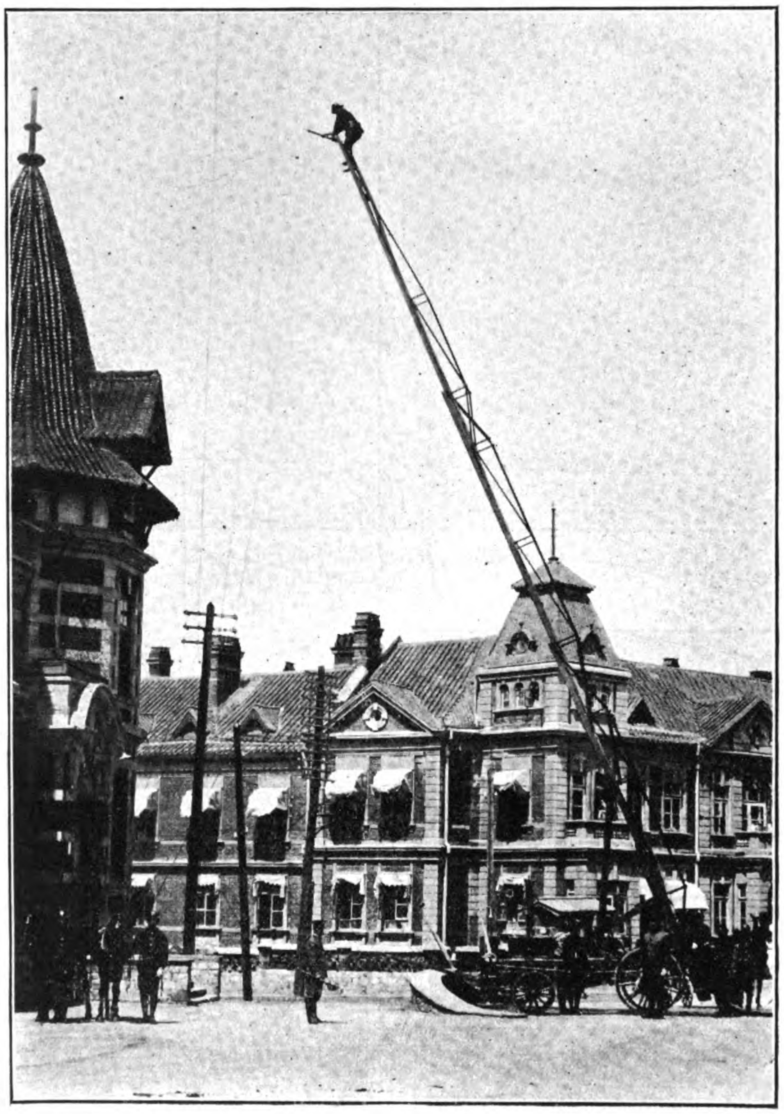
DAIREN WATERWORKS SERVICE

The city of Dairen had the worst water-famine yet known during the six months and a half from December, 1913, to June, 1914. At first the water service was suspended at night only but the natural flow at the water-source kept falling off steadily until the authorities became alarmed. They had to reckon with a possibility of an outbreak of fire and to make provision accordingly. The relation of supply to demand was such that, if there were any conflagration worth the name in Dairen, it would mean a forced denial of even the barely necessary amount of water to the residents. This contingency brought to a head the long pending question of extending the city's Waterworks, which had been deferred mainly for financial reasons. An appropriation of Y1,300,000 was asked and readily sanctioned, permitting extension work for five fiscal years till March, 1919, when the service will supply 15,000 tons of water a day, sufficient for a population of 150,000. Fears of a water-famine at Dairen then will be dispelled, at least for many years to come.

Progress has been made in the extension work so far in the first year by the construction of a light rail line starting from South Shahokou on the suburban tramway line to Hoshigaura to the water source, nearly 7½ miles, for transporting construction materials.

The water-source lies at about 10.7 miles southwest of Dairen. The subterranean flow of a river called the Malan is stored by means of a dam constructed of concrete and clay, 1,680 feet long and from 8 to 29 feet deep beneath the river bed. Last spring the height of the dam was increased by 2 ft. 9 in. by crowning it with brick masonry in order to raise the storage.

The site of the water-source was selected by the Russians. They excavated eight wells, each about 20 feet in diameter, into which the underground flow of the river was gathered. Two of Washington pumps, each of about 18 horsepower, were installed at the pumping station, which was erected at the west of the suburban tramway at the south of South Shahokou. By means of these pumps water was conducted to the domeshaped reservoir at the head of the S.M.R. Co.'s residential quarter at Fushimidai, 188 feet above sea-level. The maximum supply capacity was only 1,000 cubic meters. This was inadequate to meet the rapidly increasing requirements, and as early as October, 1905, the Kwantung Civil Administration drafted a rough plan of extension. On the establishment of the Kwantung Government, the Department of Public Works secured the first appropriation of Y468,800 (disbursed from the military list) in the fiscal year of 1906 and the second appropriation of Y600,000 (disbursed from the public works list) in the ensuing fiscal year. This extension work was finished at the end of the fiscal year of 1909.



DAIREN FIRE DEPARTMENT IN PRACTICE

As matters stand at present, the daily supply capacity is 220,000 cubic ft. or 6,111 cubic metres, enough to serve 60,000 people at the rate of 4 cub. metres per capita per day.

The settling reservoir is situated 120 yards west of the water source and is 322 feet long at the top. The four walls incline inward with the gradient of 2/10. The bottom of the reservoir has an area of 38,400 square feet. Its capacity is about 672,300 cub. ft. or 13,675 cub. metres. The filter bed is constructed also of concrete and is domed with a cover made of concrete trussed with steel girders. At the top it is 180 feet in length and 90 feet in width. The walls incline at 1/20. The bottom area comprises 15,899 square feet. The daily filtering capacity is 326,700 cub. feet, whichmeans that eleven feet of water in depth are disposed of in a day. A tract of land adjoining this reservoir is reserved for constructing another reservoir when necessary.

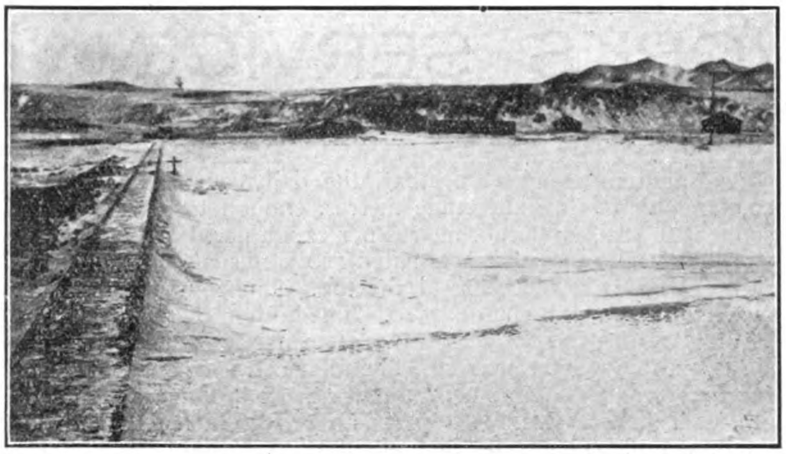
To send water from the watersource to the settling reservoir, a couple of centrifugal pumps are installed. Each has a capacity of 330 cubic feet per minute and an indicated horsepower of 30. One of them is in constant use, and the other is kept on reserve.

The pumping station at South Shahokou is equipped with two vertical plunger pumps with triple-expansion-surface - condensing - engine. Each is capable of pumping 230 cubic feet per minute on an average, and 300 cubic feet, if worked at the highest pressure. One of the two is reserved as a spare.

The old reservoir is dome-shaped and was built of concrete by the Russians. It is 91 feet in diameter at the bottom and 79 feet at the top. It may admit water to the depth of 12 feet. Its capacity is 65,700 cubic feet or 1,825 cubic metres.

The new reservoir lies south of the old one at the base of Nanzan Hill above Fushimidai, Dairen. It has a cover made of concrete trussed with steel girders. It is 117 feet square and mayc ontain a depth of 12.4 feet on an average. The inward gradient of the walls is 1/20. The capacity is 151,200 cubic feet or 4,200 cubic metres. The water-main, together with its ramifications, is 270,365 feet or approximately 52.2 miles in length.

According to the returns at the end of September, 1914, the city of Dairen contained a population of 79,680 in 16,611 households, of which 9,850 households were subscribers to the water service. Of the remainder, 8,761 households drew water from the wells, which numbered 297, or from the rivers. The daily average consumption for 12 months of 1914 was as under:—



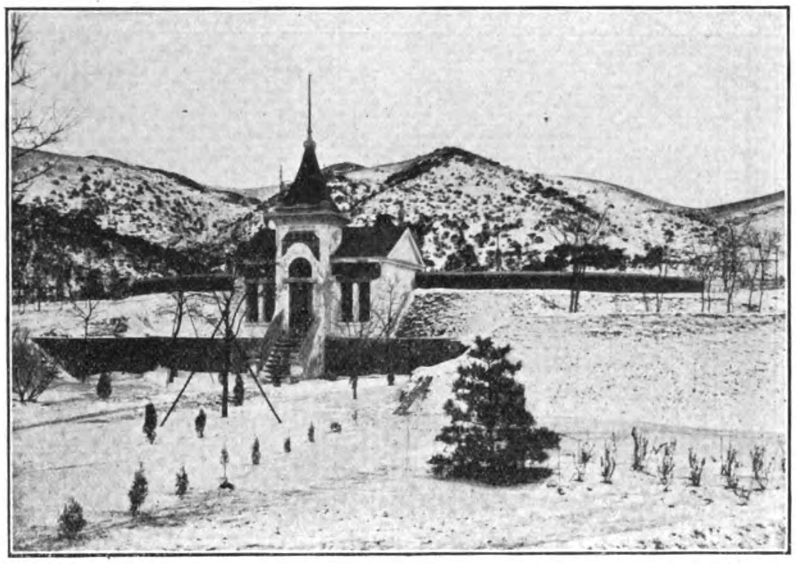
View of Dam at Reservoir

New Settling Reservoir

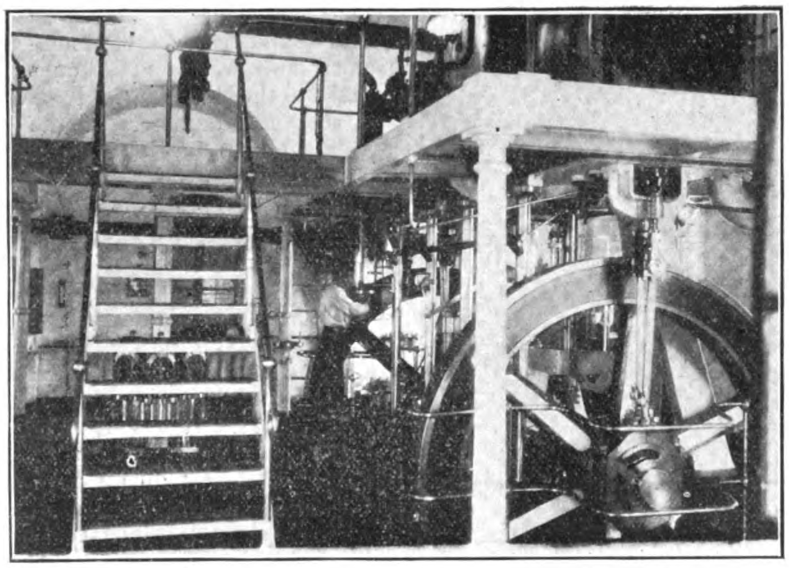
	Cub. metres.
January	2,845
February	2,834
March	3,453
April	4,053
May	4,713
June	3,681
July	4,422
August	4,738
September	4,233
October	4,230
November	4,226
December	4,404

The total consumption from April to September, 1914, was 789,095 cub. metres, classified as under:—

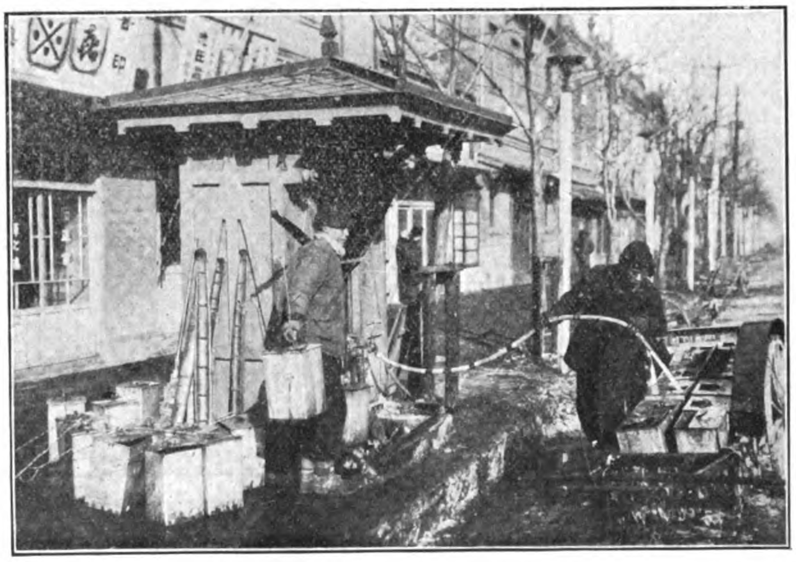
By private taps	516,590	cub. metres
By street hydrants	77,957	„
To vessels in harbour	53,706	cub. metres
Other supplies	140,845	„



Old Service Reservoir Fushimidai



Interior of Pumping Station—Shahokou



Filling a Dairen "Waterwagon"

For private taps, which are charged by the meter calculation, 10 sen is charged per cub. metre. The charges are to be paid monthly by the subscribers either direct to the Civil Administration Office or through the Chenglung Bank. There are about twenty street hydrants from which water is drawable at all hours daily. At present the water-supply contract is held by the Dairen Sanitary Union. The Union is authorized to charge 2 sen per pair of oil cans inclusive of delivery charges. Water tickets are issued by the Union and water is supplied at each hydrant in exchange for the tickets.

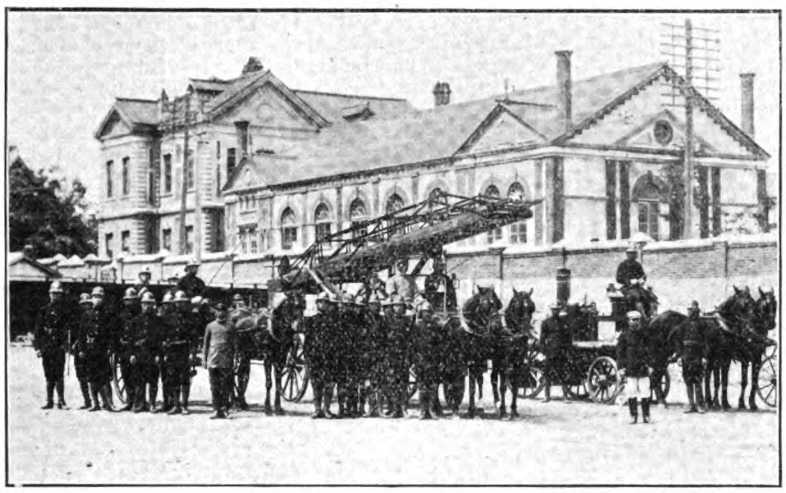
A reservoir was constructed last year in a dale below the Buddhist Temple above the terminus of the urban tramway line at the south end of West Park Drive. The Public Works Department undertook its construction, which cost Y15,000, half of which sum was contributed by the Dairen Sanitary Union. The water of this reservoir is for street sprinkling purposes exclusively. When the streets were dusty in summer from long droughts, it often happened that the city's water supply ran so short as to cause a fear for a water-famine while the consumption rose unavoidably higher. At such times the Sanitary Union, which looks after the street-sprinkling, was denied water and the Union was obliged to turn to the wells or to draw sea-water for the sprinkling purposes. Neither was satisfactory, and under such circumstances the plan of supplementing the supply by building a special reservoir was conceived. The reservoir

was constructed to hold 50,000 cubic metres. In winter excellent skating may be had on the reservoir. Trees are planted below the dam and on both sides of the pathway leading from the street. The authorities mean to adorn the hillsides, which rise on three sides of the reservoir, with flowering trees, and in course of time, this spot will become an attractive park for picnicking.

The authorities are said to contemplate turning the city's main water-source into an extensive park after the present extension work is completed. The neighbouring hills are to be planted with young trees, both evergreen and flowering. They hope by so doing to feed and husband the natural flow, and, at the same time, to create still another charming resort.

Dairen's Fire Brigades

The majority of buildings in Dairen are of brick, which accounts for the comparative immunity from fires, which number



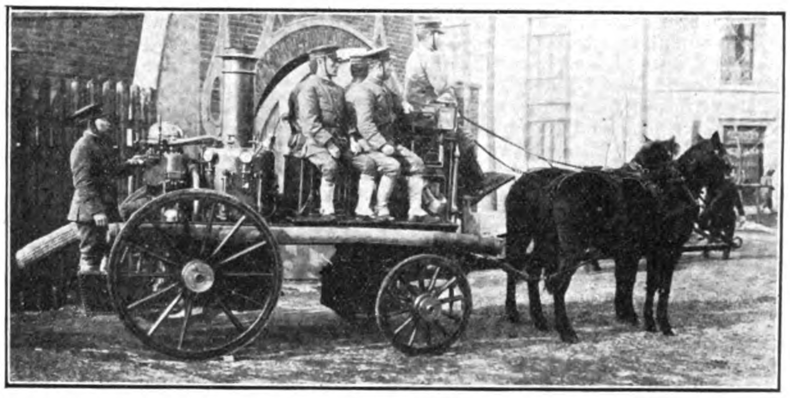
PARADE OF FIRE APPARATUS OF S.M.R. CO.

only from 34 to 54 a year. The city of Dairen has two fire brigades. One is maintained by the Civil Administration, and the other by the S. M. R. Co. The Administration Fire Brigade is organized with the standing brigade and the auxiliary brigade.

The standing brigade has its station in Oyama-dori, in front of the Dairen Lottery Office. Watch is kept on the look-out tower. Night patrols are sent to see that the fire-hydrants are in good order. This brigade comprises one foreman and twenty-two men. It is equipped with a fire engine, two hose-wagons, and eight hose-carts. The auxiliary brigade is composed of ninety volunteer firemen. They are led by one foreman and five assistants. They are called out to duty at the time of a large fire only, but follow their respective avocations. None of them is paid as is the staff of the standing brigade. There are six fire-sheds in the city in which fire-fighting implements are kept for the use of the volunteer firemen who, as a rule, reside in their neighbourhood.

The S. M. R. Co. Fire Brigade is likewise composed of the standing and auxiliary brigades. The former comprises twenty men officered by a foreman and two assistants. The brigade is provided with a fire engine, a hose-wagon, two hose-carts, and a truck-ladder company. The auxiliary brigades number seven, each having its own patrolling section. A few of them are attached to the Company's principal buildings. The S. M. R. Co. brigades are liable to be called out to help the city brigades when necessity arises.

CITY FIRE BRIGADE STATION



ENGINE READY FOR SERVICE

WHALING OFF KWANTUNG

The Osaka Whale-Fishing Co., has received permission from the Kwantung Government in May to catch whales in the coast waters of the Kwantung Leased Territory. The Company sent the whaler *Rokko Maru*, over to commerce whale-fishery on the 1st inst. There exists no record of the first discovery of whales in these waters, the whales appear in the largest numbers from the Second to the Fifth Moon by the old Chinese Calendar, and are often seen between September and November.

The mammals are found in the sea areas between the north of Kuanglutao Island and Pingtao Island, between both extremities of Ta-Changshantao Island and Maitao Island, and about four or five miles north of Kuanglutao and Huahsintao Islands, and the sea about seven or eight miles north of the centre of Ta-Changshantao Island, etc. It is said that the largest herd numbers from fifty to sixty head and even the smallest a dozen head or so. The whales ordinarily swim about about in their temporary haunts for several days, sometimes as long as a fortnight. In fine weather they are seen lingering at same places for a day or two.

JAPAN'S TRADE LOSSES

The Department of Agriculture and Commerce at Tokyo, has announced the returns of foreign trade of Japan during the first three months. The returns show a remarkable decrease on account of the European war. The total amount of exports in three months was yen 140,371,000, a decrease of yen 13,512,000 compared with those of the corresponding period of last year, while the imports were yen 127,636,000. also a decrease of yen 71,198,000, from the previous year.

ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

RAILWAYS

Chinchow-Chaoyang Line.—"In June last the Foreign Office, Tokyo," says the *Manchuria Daily News*, "made an announcement that, in 1913, the British Government proposed to lay a railway line deviating from the Peking-Mukden Line at Chinchow, east of Shanhaikwan, and running north to Chaoyang, and that Baron N. Makino, the then Foreign Minister, supported this proposition in March, 1913. This was very heartily deprecated by the public, and is regarded as one of the serious blunders made by the Yamamoto Ministry, and the Seiyukai Party, which constituted the mainstay of the Ministry. The action for permitting Baron Makino to sign away a concession which means an encroachment upon Japan's sphere of influence in Eastern Mongolia is not forgiven by the people. A report is now in circulation that the British Government is exercising itself strenuously to secure the concession to extend the railway line to Dolonor via Chihfeng (one of the seven places to be opened to international trade) over a distance of about 320 miles. Sir John Jordan, British Minister at Peking, is alleged to be the prime mover of this new scheme, which, if realized, would mean the establishment of British interests in the midst of Japan's sphere of influence. The Taonanfu-Jehol Railway in project under Japan's initiative would then be divested of its intrinsic value. If the Okuma Ministry were to repeat the blunder committed by its predecessor and to give its consent to the extension proposition, it would bring the hornets' nest about its ears. The enlightened Japanese, who, true to the spirit of the Anglo-Japanese Alliance, is ready to pay every respect to the legitimate British claims in the Far East, fails to comprehend how it is that some Britishers betray their excessive eagerness to trespass upon Japan's sphere of influence not only in Eastern Mongolia but also in Shantung." Choice!

Push on to Fengchen.—The railhead of the Kalgan-Suiyuan Railway, which is now at Tatungfu, is expected to be pushed to Fengchen during the current year. Below is the estimate of receipts and disbursements of the Peking-Kalgan and the Kalgan-Suiyuan Railways for this year:—Revenue $3,775,000; and expenditure, including redemption of two short term loans, $3,114,000, thus showing a profit of $660,000, which is expected to be increased in 1916 to more than two million dollars.

Nanking-Honan Line.—A correspondent of the *China Post*, writing from Nanchang says:—

Surveyors for the Nanking-Honan Railway are starting surveys eastward to connect with Nanking. As near as can be learned, the local station of this road will be located near the Tehshen or north gate of the city not far from the station of the Kiukiang-Nanchang line, from there it will cross the Kan River and proceed westward to Changsha. Three English surveyors are in charge of as many sections of the survey between Nanchang and the Anhwei border. Construction trains are now in operation on the Nanchang-Kiukiang railway to a stream within one mile of the Kan River just opposite Nanchang. The report is that trains soon will be running regularly for passengers between Nanchang and Kiukiang. It will be necessary to cross two or three rivers by ferry, however, for a few months, as the bridges are not all completed.

Government Help Wanted.—The Kwong Tung Yueh Han Railway Co. is waving the flag of distress and calling upon the government to help them out of their financial troubles, says a South China contemporary. The shareholders, it seems, are not coming forward with their regular payments and the statement issued by the Company shows a big predominance of disbursements over receipts.

Canton-Hankow Railway.—Since the introduction of a reform measure in the administration of the Canton-Hankow Railway, the construction is being pushed rapidly and the section between Kwangchow or Canton and Wushih for 350 li is open to traffic. Work on a further section of 51 li is nearly completed. The tunnel near Tsingfengting will be wholly excavated during this month, although it is not quite one year since the work was started. On the section already open to traffic, business is proving satisfactory, one hundred passenger and goods cars being insufficient to accommodate the demand. It is understood that a large order was given to a certain foreign firm to furnish rolling stock. The districts through which the line is to pass abound in prosperous commercial towns. The railway, therefore, is expected to be a financial success when it is completed.

Ching-Han Railway Rolling Stock.—According to an investigation made by the Communications Department, rolling stock of the Peking-Hankow Railway totals 1,560 consisting of the following:—

Special cars, 29; Passenger cars, 108; Engines, 63; Sleeping cars, 14; Box cars for horses, 194; Trucks for coal, 325; Goods cars, 503; Trucks for stone, 388; Platform cars, 24; Tank cars, 3; Derrick cars, 3; Emergency cars, 6.

French Bank Denies.—Rumours spread in Hankow, that the Banque de l'Indo-Chine and the French Group are withdrawing their participation from the Hukuang Railway, as well as the Szechuan line are denied. The Hankow branch has been authorized to state that the French Group will continue to meet all its obligations and that it waives none of its rights and privileges as regards the above mentioned railways.—*Central China Post.*

Port of Pukow.—The Ministry of Finance has been instructed to provide means to meet the expenses for the construction of the Port of Pukow, all other preparations being now complete.

Wuchang Mint Road.—The light railway in Wuchang constructed by the Wuchang Mint was contracted with the Ho Hsing Company, but on account of the absence of Mr. Wen Ting-chang, Mint director, the cost was not paid. After a recent inspection by Mr. Wen, before giving over his duties to the new director Mr. Tsai, it was discovered that one bridge was not according to the specification. The contractors have been ordered to re-construct the bridge and part of the rail line before their account will be submitted to the Board of Finance for payment.

Nanking-Kiangsi Line.—It is learned that the building of the Nanking-Kiangsi Railway, which has been projected by the Government, will be started in the near future. A short time ago, says the *Peking Gazette*, the Director of the railway took with him certain funds from Peking to the South to start the work.

Iron Ring for Peking.—The Ministry of Communications has submitted a report to the President regarding the scheme of building a railway round the city wall of Peking. It may be summarised as follows:—

Soon after receiving the suggestion of building a railway from Hsichihmen, the Peking-Kalgan Railway Station, to Chienmen, the Peking-Hankow Railway Station, the Ministry ordered a survey. Engineer Kwong reported that the connection would cost $250,000 but that the benefit would greatly offset the small cost. The work was entrusted to the Peking-Kalgan Railway Administration which Administration now asks that the opening of the outer walls of the several gates be ordered so that the track may go through. Purchase of land, dredging of canals and other matters will be carried out with the assistance of the Ministry of Interior. Stations will be built at four of the gates. The actual cost is now estimated at $200,000. Presidential sanction has been given to the above scheme, and the construction work should begin very soon.

Light Rail in Tungshan.—There is a scheme on foot among Chinese in the Tungshan District to build light rail lines connecting Hsingking, Tunghua, and Hailungcheng, chiefly as carriers of produce in the so called granary of Manchuria.

Sungari Takes Bridges.—The thaw in the Sungari raised the river 10 feet, overflowing the banks near Chiuchan. Many houses and bridges were washed away, and a large number of cattle were lost. During the flood of the Itung River outside Changchun the bridge near South Gate was washed away. The bridge had been constructed by the Chinese Guild of the Railway Town of Changchun. The Guild learned that the bridge frame, while being carried downstream, had been intercepted by some Russians residing at Kwanchengtzu and been brought ashore.

Mukden Terminal Station.—The terminal station building of the Peking-Mukden Line of the Chinese Government Railways at Mukden is to be constructed on its present site outside West Gate. Architects are at Mukden, drawing the plan for the new building which will be very much after the design of the Peking terminal station.

S. Manchurian Traffic Returns.—Traffic returns for the last decade of March, marking the close of the last fiscal year, yielded the South Manchurian Railway Co. a daily average of Y83,654, being an increase on the corresponding period of last year by Y10,443.

This wound up the fiscal year just past with an increase of Y1,393,194, over the preceding fiscal year. The total increase in the traffic receipts for the produce season from December, 1914, to March last reached Y2,541,267.

The Manchuria Daily News reports the approval of the proposed loan of Y6,000,000 for making up the deficit in the Company's enterprise funds from the Tokyo Government. This loan will not be required probably before next autumn. Negotiations will be conducted to secure the best possible terms.

The estimated capital expenditures for the fiscal year of 1915, as sanctioned by the Government, amount roughly to Y 5,678,000, composed of the following:—

Railways, rolling stock workshops	Y1,957,000
Shipping	99,000
Electricity	200,000
Gas	84,000
Harbour and harbour works ..	1,119,000
Mining..	1,456,000
Hotels..	6,000
Land, Hospitals, schools, etc. ..	212,000
Railway Towns	244,000
Residences, and store-houses ..	292,000
	Y 5,678,000

Will Use Home Coal.—The Japanese Department of Communications has made coal contracts for 1915 with Japanese firms, but no foreign coal was rendered. The total tenders were 2,200,000 tons, valued at yen 11,000,000, of which Mitsui will supply 700,000 tons, Mitsubishi 400,000 tons, Hokkai Colliery 350,000 tons, Tokiwa 600,000 tons and Sumitomo, Furukawa and Yasukawa the remainder.

Anotsu Light Railway.—A charter has been granted to the Anotsu Railway Company for a light railway between Ando, Ano-gun, and Osato, Age-gun, Miye prefecture. The estimated cost is 50,000 yen.

Japan's Railway Earnings.—The official estimate of the working of the Imperial Government Railways for the year ending March 31, 1915, follows:—

Gross Revenue ...	...Y122,143,886
Expenditures ...	... 103,761,543
Net Profit	...Y 18,382,343

The official estimate for the year ending the 31st March, 1916, is:—

Gross Revenue ...	...Y122,143,886
Expenditures ...	... 103,761,543
Net Profit	...Y 18,382,343

The result of nine months working from April 1, to December 31, 1914, was:—

Gross Revenue ...	...Y 88,124,435
Expenditures ...	... 77,586,850
Net Profit	...Y 10,537,585

Four Tokaido Bridges.—Four big railway bridges along the Tokaido line are now under construction. Two bridges over the rivers Tenryo and Oi, are nearly completed, while one over the Nagara is expected to be open in two or three months while that one over the Fuji will be finished within the current year.

Tram Service on June 15.—The Imperial Railway Bureau has finally announced that the electric tramway service between Tokyo and Yokohama will recommence on June 15th.

Russian Railway Traffic.—According to the official report of the Russian Railway Department, the total lengh of railways in Russia extended in 1913 aggregated 62,200 versts (an increase of 1,286 versts compared with the previous year), and the number of passengers was 258,000,000, an increase of ten per cent. Passengers' hand-baggage and other luggage totalled 116,000,000 poods, while ordinary goods weighed 15,653,000,000 poods. The gross receipts were 1,162,000,000 roubles, an increase of slightly less than ten per cent, while expenses aggregated 587,000,000 roubles. The number of lines is 39, of which those in European Russia owned by the Government measure 33,178,000 versts in length, and whose average earning power is 18,850 roubles per verst. The total length of private lines is 18,991,000 versts, earning 17,888 roubles per verst. In Far Eastern Russia, the average receipt of government lines is 10,878 roubles per verst, and that of private railways 9,300 roubles per verst. The expenditure of the latter is much less than that of the former.

New Russian Railway.—The Russian Government has drawn a plan for the construction of a railway line through the southern regions of Siberia to connect the Black Sea with the Pacific Ocean. After the completion of this railway line, Russia will have two trunk lines linking European Russia with Siberia.

Russian Development.—The British Minister in Peking reports that the Amur Railway is to be pushed forward and the sum of 1,000,000 roubles (about £105,000) of Government funds will be expended in the current year on the Verkhneudinsk-Kiakhta Railway. According to the Harbin press, an inter-departmental conference has been held in the Department of Railway Affairs at Petrograd to consider the extension to Urga of the projected railway from Verkhneudinsk to Kiakhta. It is understood that the decision was affirmative. The reasons are to be found in the altered economic position of Russia in Mongolia and the Far East. The fall of the German fortress of Tsingtao and the expulsion of German trade from almost all the Far Eastern ports furnishes Russian industry and trade with an abundant opportunity to acquire various markets in China.

To secure a closer connection between Russia, Japan and China, it is proposed to organise a Sino-Russia-Japanese company, the principal object of which will be the co-ordination of the contemplated reciprocal commercial relations between these three countries. The inter-departmental conference above referred to also considered the question of the delimitation of the spheres of economic influence of Russia and Japan and came to the conclusion that such a delimitation is capable of realisation. The same conclusion has been reached on the Japanese side. In a further extract from the Harbin press it is stated that the Russian Government has granted to the Siberian Trading Bank the right to issue in Mongolia money coined in the Russian mint. On one side of the coins the value will be impressed in the Russian language and a corresponding impression in Mongolian will be made on the reverse side. For exchange purposes the money will be equal to the Russian rouble (par value, 2s. 1½d.) This new money, which it was intended to bring into use in March will be the legal tender of Mongolia. A monetary reform of this kind, its initiators and the Mongolian Government say, will regularise financial dealings in Mongolia and destroy the influence which Germany has acquired by means of its Hamburg silver.

Manila R. R. to make Guarantee.—In connection with the litigation between the Tayabas Land Company and the Manila Railroad relative to deposit previously required as a guarantee for lands expropriated, Judge Paredes has reaffirmed his decision requiring the company to deposit P 1,000,000.

Meantime Board of public utilities commissioners is continuing its investigations into the Tayabas transactions, as to relations existing between the Tayabas land company and the Philippine estates development company. If it is found that the former is a branch of the development corporation, proceedings will be brought against the latter, which, by its articles of incorporation, is prohibited from dealing in lands.

F. M. S. Offices Moved—The construction head offices of the Federated Malay States Railway have been removed from Seremban, and permanently located in Kuala Lumpur. All communications should be addressed to the Chief Resident Engineer for Constructions, F.M.S. Railways, Kuala Lumpur.

Burma Railway Hotel.—The Burma Railways Company proposes to build a hotel at Kalaw and, in the meantime, is preparing to make temporary arrangements for visitors.

All Steel Cars in India.—All-steel cars are being experimented with on several railway lines in India. Others lines probably will await the results of lines that now have the matter under consideration. Metal freight cars have long been in use in India, but passenger cars are usually built of teak-wood resting on steel underframes. This wood formerly was cheap but with the rise in price of teak and the cheapening of steel the use of the latter has become possible.

The Railway Board of India has issued instructions to install electric lighting in all carriages on State-worked railway systems. The general adoption of electric lighting has now been decided on.

Emden Stimulates Railway.—The Emden's exploits are now a thing of the past, but the inconvenience they caused brought into renewed prominence the project for constructing a railway between India and Burma, Rangoon having been practically cut off from the Bengal coast during the raids of the German cruiser. Now the Government has taken the matter up, and a survey is being made. The most probable route would be along the coast, the start being made from Chittagong, the terminus of the Assam-Bengal railway, and then running southwards through the rice fields to the Indo-Burmese frontier, thence for 160 miles to the harbour of Kaukkphu. This line would cost about £7,000,000. Another proposed route is *via* Manipur, which would cost about £5,000,000; and a third is *via* the Hukong Valley, this being the cheapest, the cost being estimated at only £3,500,000, but the line would run through a very thinly-populated country, whereas the Chittagong-Kaukkphu route would pass through a district already possessing a big trade.

Indian Railway Budget.—With an anticipated surplus of £1,256,000 converted into a deficit of £2,741,000 in the Indian Budget for 1914-15, an anticipated deficit in the year 1915-16 of £2,770,000, accompanied by the inevitable stringency of the money market resulting from war conditions, it was only to be expected that there would be a reduction in the allotment for capital works on Indian Railways in the coming year but the press questions whether the reduction from £12,000,000 to £8,000,000 is not going too far. In normal times equipment has been so far below the necessities of trade that the temporary set back in transport demands might have proved a blessing in disguise. Lord Hardinge's remarks at the opening of the Lower Ganges Bridge appear to indicate an early allotment of funds for a Bengal-Burma connection railway, a project which will inevitably prove a big 'money eater,' without much promise of direct return on the outlay, as in the case of the Assam-Bengal Railway.

The Indian Railway Board have sanctioned a survey by the Assam-Bengal Railway Administration for the following lines of railway on the metre gauge:—

From Karimganj into the Longi Valley to Hathikhera with a branch into the Chargola Valley, 44 miles, and from Silchar to Dwarbund with branches to Sonaimukh and Dhalai, 30 miles. This survey will be known as the Assam Feeder Railways Survey and both feeder lines will tap rich tea districts.

A detailed survey is being carried out by the agency of the Darjeeling-Himalayan Railway Extensions Company, for a line of railway from Thakurgunge to Sikti, 44 miles.

A detailed survey will be carried out by the South Indian Railway Administration for a line of railway on the 2 feet 6 inches gauge from Krishnagiri on the Tirupattur-Krishnagiri Railway to Royakota on the Morappur-Hosur Railway, 14 miles.

The Board also has sanctioned the construction, by the South Indian Railway, of a branch line, metre gauge, from Tirutturaipundi, a station on the South Indian Railway,

to Vedaraniem, 23 miles, to be known as the Tirutturaipundi-Vedaraniem Railway. The construction of this line will bring the railway to the sea. To the west of Vedaraniem is a great salt swamp, which covers a tract 30 miles long by 4 or 5 miles wide.

The construction by the Bengal Provincial Railway Company of a line of railway on the 2' 6" gauge from Dasghara, a station on the Bengal Provincial Railway, to Jamalpurganj, a distance of about 8 miles, also has been sanctioned. The line will be known as the Dasghara-Jamalpurganj branch.

SHIPPING

Japan's Merchant Marine.—According to the returns of the Communications Department, the steamers and sailing ships of Japan on the register at the end of 1914, numbered:

Tons. Steamers.	Number.	Gross tonnage	Registered tonnage
20 to 100	1,039	46,024	24,523
100 to 300	451	83,692	46,505
300 to 500	87	33,979	20,448
500 to 1,000	142	103,581	64,063
1,000 to 2,000	127	193,812	123,478
2,000 to 3,000	119	293,917	193,365
3,000 to 4,000	83	281,037	182,249
4,000 to 5,000	24	106,064	72,964
5,000 to 6,000	14	76,373	48,822
6,000 to 7,000	30	187,625	115,779
7,000 to 8,000	3	23,327	14,123
8,000 to 9,000	4	34,131	21,160
9,000 to 10,000	2	18,820	11,667
Over 10,000	8	94,143	55,424
Total	2,133	1,577,025	994,570
SAILERS.			
20 to 100	6,452	311,327	288,281
100 to 300	1,485	197,539	183,732
300 to 500	5	1,939	1,567
Over 2,000	1	2,439	1,741
Total	7,943	513,244	475,321

Japan's Subsidies.—The Department of Communications gave the following subsidies to steamship companies for the ensuing fiscal year, commencing March 31.

Companies	Routes	Yen
South Ocean s.s.	S. Ocean	280,000
Japan-China s.s.	China	538,000
N.Y.K.	Shanghai	232,000
N.Y.K.	N. China	118,000
N.Y.K. and O.S.	Japan Sea	264,000
O.S.	Dalny	10,000
N.Y.K.	Hokkaido	25,000

The Government's subsidy for building new vessels has enormously increased of vessels building in Japan which will be completed within two years, and for which the Government will give four million yen subsidy. The annual subsidies are as follows:—

1905	Y 574,132
1906	494,428
1907	677,348
1908	1,509,575
1909	1,021,460
1910	369,084
1911	614,054
1912	673,344
1913	973,884
1914	1,050,000
1915	1,560,000
1916	2,500,000

N.Y.K. to pay 10 per cent.—The business of the Nippon Yusen Kaisha during the half year ending March 31 was reported to be unsatisfactory owing to the European war, excepting American, Australian and Calcutta lines. The expenditure of the company has increased enormously, while the revenue has decreased. The reduction of subsidy is also responsible for this decrease. The total amount of decrease is 200,000 yen compared with that of the previous term. The net profit of the term is two million and a dividend of 10 per cent. may be declared at a general meeting, scheduled to be held in May.

T. K. K. has Deficit.—The Toyo Kisen Kaisha held a general meeting of shareholders, to discuss what should be done as to the losses of the company during the half year from July 1, 1914, until March 31, 1915, amounting to yen 145,811.788. The report of business conditions of the half year as follows:

Total revenue	Y. 3,520,155
Total expenditure	3,665,967
Balance, losses	145,811
Surplus from previous season	7,892
Net deficit	137,918

Turn Down Big Order.—The Russian Trading Company of Odessa, which runs lines in the Black Sea, has been negotiating with the Mitsubishi Shipbuilding Yard to build four 3,000-ton steamers. The yard, however, being overstocked with orders for the construction of the *Hawaii Maru* for the O.S.K.; three steamers for the N.Y.K.; a 7,500 tons steamer for the Suzuki Co., Kobe, and a warship, has been unable to accept the order.

Japan's Shipbuilding Boom.—The shipping boom in Japan has now reached its acme and not a ship is lying idle although the merchant tonnage launched in Japan during the year 1914, some 85,860 tons, is nearly 33 per cent higher than the output for 1913, and exceeds all previous totals. It comprises three steamers of between 11,000 and 12,000 tons each, and one steamer of 7,345 tons, fitted with geared turbine engines. The remainder of the total is composed of vessels of small tonnage, of which twenty-six vessels of 51,038 tons, were built at Kobe and Osaka, five vessels of 32,623 tons at Nagasaki, and one of 2,200 tons elsewhere in Japan. Two steamships, with a total tonnage of 13,618 tons, were built for Japan in the United Kingdom against one vessel in each of the two preceding years.

Some shipping companies of Japan have chosen to build new vessels and orders have already been placed of dockyards for the construction of ten cargo-vessels as follows:—

	Nos.	Tons
Osaka Iron Works		
Russo-Japanese Fishery Co.	1	3,000
Tatsuma S.S. Co.	2	"
Hakuyo S.S. Co.	1	"
Mr. N. Hiroumi	1	"
Meiji Marine Trans. Co.	1	"
Mr. S. Yamamoto	1	"
Mr. Changpenching (Chefoo)	1	1,000
Uraga Dock		
Yamashita S.S. Co.	1	3,500
Mr. S. Nakamura	1	"

The Osaka Shosen is now building six cargo vessels, 7,500 tons each, at the Osaka Iron Works, and the N. Y. K. is also building two cargo vessels at the Mitsubishi Shipbuilding Yard in Nagasaki, new vessels with a total tonnage of 200,000.

Aside from the new ones ordered several, steamers have lately been acquired by purchase the majority of them being registered at Dairen. The China Commercial Company's steamer *Loongyue* has been purchased by Messrs. Tanaka & Co. of Dairen and will be placed on the Vladivostok cattle trade. The *Haddonhall*, 2,608 tons, which was recently refloated and taken to Nagasaki has also been bought by Dairen owners. She was built in 1898 by the Tyne I. & SB. Co. of Newcastle with dimensions 290ft. by 43ft. by 19.5ft. The steamer *Monmouthshire*, which left London for delivery at Dairen on March 13, has also been sold. She was built by the Sunderland S. B. Co., Sunderland, in 1912, with dimensions 400ft. by 52ft. by 20.1 ft. and a gross tonnage of 5,092. The Adelaide S.S. Co. has disposed of its steamer *Moonta*, formerly *La Serena* 2,266 tons, to Dairen owners. She was built in 1892 by W. Dobson & Co., Newcastle, with dimensions 280ft. by 38.1 ft. by 16.2ft. and has been purchased by Tungho Co.

S.S. Co.'s New Steamer.—The second vessel ordered from the Hongkong and Whampoa Dock by the Straits Steamship Company has been launched and named the *Kampar*. She is a steel screw steamer of the single deck type. Her principal dimensions are as follows:—Length between perpendiculars 225ft. Breadth moulded 36ft. Depth moulded 14ft. Height of erections 7ft. 6in. The propelling machinery consists of one set of triple-expansion engines with cylinders 17in., 27in., and 44in., and 30in., stroke. Steam is supplied by two boilers 14ft. 3in. diameter and 10ft. 6in. long working at a pressure of 185lb.

Tsingtao Shipping.—According to the official investigation, during March, 53 vessels, 96,817 tons, entered Tsingtao. They consisted of 48 Japanese and 5 British ships. Departures were 51 ships, 163,241 tons, consisting of 47 Japanese and 4 British ships. This brings up the total of ships entered the harbor since its opening to trade to 154, totalling 263,848 tons, and those cleared to 149, aggregating in tonnage 255,659 tons. In March, passengers landed numbered 4,866, consisting of 3,728 Japanese, 1,195 Chinese, 20 British, 8 Russians, 5 other foreigners. Those who left Tsingtao by steamers during the same month amounted to 3,340, consisting of 1,440 Japanese, 1,883 Chinese, 8 Britons, and 9 other foreigners.

Dairen Shipping.—The shipping returns for Dairen Wharves for March follow:—

	Arr. Nos.	Arr. Tons	Dep. Nos.	Dep. Tons
Japanese	174	295,067	177	301,961
British	18	43,485	19	46,037
Chinese	21	14,035	12	15,103
Norwegian	—	—	1	2,097
American	—	—	1	2,256
Russian	1	2,716	1	2,716
French	1	1,136	1	1,135
Total	215	356,438	222	371,305

The above is increase of 31 vessels (of 17,858 tons) and 38 vessels (of 54,312 tons) and also of 41 vessels (of 49,917 tons) and 42 vessels (of 60,182 tons) in entries and clearances over the corresponding period of last year and the previous month respectively.

Nanyo Kisen Kaisha.—The Nanyo Kisen Kaisha (The South Sea Steamship Co.) opened the South Sea Island service under the new Government contract in April. The ships, according to the new arrangement, are to call on the outward voyage at Hongkong, Batavia, Samarang, and Sourabaya. Hitherto, they used to sail from Sourabaya to Hongkong direct, but now they are ordered to call at Macassar and Balic Pappan. The ships in the service were the Ryojun-maru, Banri-maru and Hokuto-maru, which maintained monthly service. The Borneo-maru is added to the list, and the four steamers will maintain 16 voyages a year, a ship leaving every 23 days.

Rubi and Zafiro Sold.—Messrs. Shewan, Tomes and Company's steamers, Rubi and Zafiro, have been sold, to a British firm in England. The price is said to have been one third of the original cost of the steamers which was £60,000 each.

Only a few months ago an offer of £45,000 was received for the Rubi from a French firm and was refused. In 1910, the steamers were placed under the American flag and were operated by the Philippine Steamship company. They were of 2,538 tons register, with 1,370 horsepower nominal, 300 feet long and 40 feet broad, built at Port Glasgow. The steamers were withdrawn from the run early last year. Since then the steamers have plied between Saigon and Hongkong and the Straits Settlements and Hongkong.

Would Charter Rizal.—An offer of £11,000 or P110,000 was recently made to the customs authorities to secure the Philippine cableship Rizal for a shipment of copra to Marseilles, and it was said at the custom house that the chief reason for not accepting the offer was the unreliable condition of her boilers for undertaking a long voyage. The new boilers lie ready at Hongkong to be installed. When she returns from Hongkong, fit to undertake a trip to Europe, an offer of P110,000 for a three months' charter, it was intimated, might be more than the government could resist.

New Super-Dreadnought.—It is reported that the keel for a Super-Dreadnought, which will ultimately be christened Hyuga, has been laid in the Mitsu Bishi Shipyard, Nagasaki. The materials will be entirely obtained in this country. Iron has already been supplied by the Government Iron Works, Yawata, Fukuoka.

The armouring of the two battle-cruisers Kirishima and Haruna, both sister-ships of the Kongo and Hiye, has greatly progressed at the Mitsu Bishi Dock in Nagasaki and the Kawasaki Dock in Kobe respectively. These warships soon will be delivered to the Navy Office.

The Navy Office has decided to request in the forthcoming extra session of the Imperial Diet 23,130,318 yen for the construction of warships, in the form of a supplementary estimate for the fiscal year 1915-16. The outlay is the annual appropriation for the fiscal year for the construction of three battle-cruisers, Yamashiro, Ise and Hyoga, and four destroyers of a large type, four other destroyers of a middle size and two submarines. Of these three battle-cruisers, the Yamashiro alone was started and 1,200,000 yen has already been spent for her. The naval construction programme above-mentioned is to be completed in the fiscal year 1918-19; the annual appropriations for the three following years are as follows:—

1916-17	Y. 36,048,489
1917-18	25,815,641
1918-19	6,360,498

Pacific Mail May Quit.—When the 1,100 stockholders of the Pacific Mail Steamship Company hold their meeting the question of selling the seven steamers of the company will come up as R. P. Schwerin, general manager of the company, according to the "San Francisco Examiner," has made a report to the stockholders which shows the cost of operation under the new Seamen's Bill to be prohibitive. And it is freely predicted that when the stockholders meet they will vote to sell out. It is also predicted, equally freely, that the purchasers will be Japanese.

Schwerin said recently that the new act of Congress, which fixes efficiency for seamen and was inspired by the Seamen's Union, left the Japanese as the only people on earth who will be able to make money out of navigating the Pacific Ocean. In his letter to the stockholders, Schwerin shows that to-day his company has only five American ships engaged regularly in the trans-Pacific trade and that these ships are compelled to meet in competition the ships of the Toyo Kisen Kaisha, which are subsidized by the Japanese Government for $1,340,000 a year; the Osaka Shosen Kaisha, which has a subsidy of $605,000 a year; the Nippon Yusen Kaisha, which is given a subsidy of $238,000 a year, and the Canadian Pacific Steamship Company, which is subsidized for $218,000 a year.

HARBORS, PORT WORKS AND CONSERVATION

Opening Lungkow.—The Superintendent of the Tunghai Customs, Shantung, has reported to Peking in connection with the opening of Lungkow as follows:

"If the new port is to be built, it should be situated at the North Bay or Pei Ta Chuan. This place possesses a water frontage of more than 4,000 mow, the water averaging 16 feet in depth. From this bay to the sea, there is no reef or other obstacle to navigation. The new Customs House should also be situated here. I suggest that the funds for the construction work be drawn from the revenues of the Chefoo Customs."

Singapore's Improvements.—The dock improvements at Singapore have converted that port to a first class entrepot as well as a naval base, and its position on the ocean highway between Europe and China ensures to it permanency and further development. Already an important terminus of the Malayan railway system, its harbour facilities will be greatly enhanced when the bridge is constructed across the Straits of Johore.

The Treasurer, Hon. A. M. Pountney, at the Legislative Council meeting in Singapore, April 16, proposed the following motion: That this Council approves the advance from time to time during the current year from Colonial funds of sums not exceeding in the aggregate $1,650,000 and $2,225,000 to meet current expenditure in connection with the Singapore Harbour works and the Tanjong Pagar Dock works, respectively; the sum so advanced to be reimbursed from the proceeds of a further loan to be raised under Ordinance IV of 1907, and, if necessary, under an ordinance to amend that ordinance. The motion carried.

F. M. S. Public Works.—At Penang and Port Swettenham improvements are in progress, all making for the rapid transit of goods inward and outward and the trans-shipment of cargo from local vessels to the ocean steamships. The administration of the Federated Malay States spent on public works in 1913, some £1,145,500, and in five years over four and a-half millions sterling. For 1914 the Federal estimates provided for an expenditure of £2,839,809 on railways, etc., against £2,168,966 in 1913.

Dairen Harbour Works.—The estimated disbursement for Dairen Harbour Works for the present fiscal year was originally Y2,600,000, from which the estimates for work, suspended or postponed, have to be deducted. The actual amount of funds laid out from the beginning of the fiscal year was Y1,145,000. One of the most important pieces of work was the construction of a new Wharf and the quay wall for its base.

The new quay being 2,000 ft. long, 400 ft. wide, the total berthing frontage of Dairen Wharves will be extended to 5,300 ft.

The reconstruction of the quay wall on the west side of Main (Sesond) Wharf extending 1,968 ft. in total length, was finished by the end of the year. The Northwest Breakwater designed to be 11,700 ft. long, from 10 to 20 ft. wide, and from 17 to 19 ft. above low-tide, had its construction work continued to the extent of 12 per cent., leaving 12 per cent. more of the work to be completed.

The breakwater intended to shelter the Public Wharf from the waves, on the west side is to be 3,100 ft. long; from 3 to 6 ft. wide at the top and from 16½ ft., to 18 ft. above low tide and 1,700 ft. thereof was finished by May 30th last. The remainder of the work will hardly be taken up for a few years.

The original dredging plan was to remove about 15,000,000 tons of silt from the bottom of Dairen Harbour. The progress of work attained up to last December was 8.6 per cent., leaving 19.4 per cent. more to be negotiated. When all is done, the Basin will have 30 ft. of water at low tide.

An area covering about 107,000 *tsubo* on the shore front at Jijiko is to be reclaimed. 7.7 per cent. of the work was done last year leaving 16 per cent. of work to be finished. The reclaimed area is to be bunded with a stone wall. About 24,000 *tsubo* of shore area at the rear of the S. M. R. Co. Stores Depot in Hamacho also is to be reclaimed and bunded. The work progressed by 35 per cent. last year.

Repairing Poyang Dyke.—When Hsu Shih-kuang, Commissioner for repairing the flooded dike at Poyang on the Yellow River, asked for funds to carry on the engineering work, the President instructed the Ministry of Finance to send $500,000, and the Chihli Governor to send $800,000. He also ordered the Ministry of Finance to ask other provinces to raise the balances of funds required for the repairs on the dyke.

The estimate made by the Director-General of the conservancy work of the Yellow River provides for a total expenditure of $5,376,580. The Director-General was given $400,000 when he left Peking and funds reserved for the redemption of the Tientsin-Pukow Railway amounting to $980,000 will also be given to the conservancy work. The Ministry will try to pay $600,000 and the provinces of Chihli and Shantung, $200,000 each every month for conservancy work.

Conservancy in Kiangsu.—Following a recent tour of inspection, Governor Chi Yueh-lin has reported as follows:—"There is an Irrigation Bureau established to attend to the Conservancy Work of the southern bank of the Yangtze River. The work has been carried on with considerable success along the Liu River, Tuyang River and the Grand Canal at Kiangyin, and no disaster need be feared in future as provisions have already been made against the drought and the flood. However the dykes in Paoshanhsien have not been repaired for many years, and some calamity may happen in that district. I was struck by the danger of a breach along the broken dykes. The inhabitants offered incense to me praying most earnestly for the safety of their lives by repairing these dykes. As these dykes affect the life and property of the people of more than 10 hsiens, immediate steps should at once be taken."

Vladivostok Harbor.—According to a report from U. S. Consul Caldwell, the contractor who has in hand the work on the permanent port improvements of Vladivostok had no replies from American firms and has had to purchase in Japan cranes and other machinery most urgently needed, amounting to $175,000. He will still require $500,000 worth of machinery. Among appropriations for 1915 confirmed by imperial order were 70,700 roubles ($36,410) to deepen the approaches to Nicolaevsk and 1,700,000 rubbles ($805,500) for Vladivostok Harbor.

The Russian Government made preparation to export through Vladivostok 350,000 tons of wheat from the Omsk, Siberia, district. Vladivostok had no facilities for handling such an amount of cargo, but as it was the only port from which the shipment could be made, temporary moorings and storehouses were constructed. All temporary moorings are connected with the railway by spurs. Warehouses covering 190,000 square feet have been finished 45 days. This has increased the warehouse capacity of the port by 100,000 tons per month.

Karachi Reclamation.—A plan is now under consideration to fill in and use for the expansion of Karachi, Northwest India, parts of a mangrove swamp about 3 miles long which extends from the harbor into a part of the city. This swamp cuts off the growth of the city on the south and prevents the solidifying of the city and harbor districts on the side At present the solidifying of the district between the city and the port has been on the opposite side; and as much of the space

between the swamp and that part of the business district of Karachi which extends from the central portion of the place to the docks is taken up by railway yards, storehouses, and open-air landing places for goods which arrive from up-country by the North Western Railway, the entire city and port have been extended into a long, rather narrow, and straggling place.

Manila's New Pier.—Bids have been invited for the construction of the new cross pier, bulkhead, and cargo sheds, to connect pier three with pier five, to furnish 720 feet of additional wharfage space for interisland steamers and the smaller foreign vessels calling at this port. The new pier will cost P175,000, exclusive of the cargo shed. The governor-general has recently released P215,000 of the gold standard fund for this project to meet the expense of installing the bulkhead and pier, which will take about 15 months. The structure, including the cargo shed, will cost about P550,000. The distance from pier three to pier five is 728 feet. In the original scheme, a section of about 75 feet at the shore ends of piers three and five was built of wood temporarily so that the cross pier could be extended across the two piers, making the cross pier and cargo shed about 900 feet in length.

FINANCIAL

China's Revenue.—A recent compilation of the various items of revenue received during the first two months of the present year shows a total of $28,000,000 divided as follows.

Land Tax	$7,800,000
Salt Tax	7,600,000
Customs revenue	6,200,000
Title-deeds inspection fee	1,300,000
Wine and tobacco tax ...	1,400,000
Mining tax	200,000
Business Tax	1,000,000
Stamp duty	500,000
Official property income ...	2,000,000

Yuan Shih-k'ai-Retrenches.—Owing to the financial stringency President Yuan has curtailed expenses of the Presidential Offices. The expenses amounted to $480,000 and economies are being made which will reduce this amount by a third from the beginning of next month.

Stamp Duty Revenue.—Since the introduction of Stamp Duties little progress had been made, until the opening of this year when the monthly receipts began to be encouraging. According to reports of the Ministry of Finance, in the 3rd month alone $11,000,000 worth of stamps were issued to the provinces, and it is expected that the proceeds realized will at least exceed $8,000,000

Salt Revenue for March.—The salt revenue of China in March was $5,000,000, an increase of $1,000,000 on the preceding month and also on the corresponding month of last year.

Subscribe to New Loan.—According to the estimates of the Bureau of Domestic Loans, the bonds of the new Domestic Loan which were offered for sale recently, will be fully subscribed within four months. Upwards of $1,000,000 worth of bonds were taken up by official circles in Peking, before the subscription was opened to the public.

Hunan Revenues.—According to the report of the Finance Bureau of Hunan, the receipts of that province during the past year are as follows:—Land tax, $1,900,000 (greatly reduced by exemption as a result of floods and drought) Likin, $3,980,000, (large increase due to reorganisation of collection stations). Inspection of Title Deeds, $2,680,000. Rice tax two months), $340,000. Stamp duty, $50,000. Mining Tax, $140,000. Profit from Government mines, $1,850,000. Profit from the official mints, $125,000.

Revolution Indemnities.—The following statement, issued by the Ministry of Finance, contains particulars of various amounts paid for indemnities in respect of the losses sustained by foreign subjects during the late Revolution:—

Great Britain, Tls. 168,835.75; Germany, 944,778.68; France, 758,649.88; Russia, 132,898.09; Japan, 1,781,677.15; United States, 784,793.93; Italy, 80,635.98; Spain, 3,678.36 Holland, 18,115.85; Belgium, 111,273.10; Austria, 10,810.28; Denmark, 274,775.16; Sweden, 9,319.69; Total, Tls. 5,080,241.92.

Japanese War Notes.—The Japanese war notes still left in circulation in Shantung are estimated at about Silver Yen 1,300,000.

Tsingtau Customs Receipts.—The receipts of the Tsingtao Customs have not been included in Japan's National Revenue, but been left to the temporary custody of the Tsingtau branch of the Central Treasury, says the Manchuria Daily News. However, since the Customs is located within the Japanese occupied district, the Garrison is at liberty to dispose of the Customs receipts as it pleases unless there exists some special understanding with China. We understand that some official of the Tokyo Government recommend the use of the Customs receipts for the improvement of harbour facilities. Some even suggest that the funds should be used to reclaim the shore front as ground for an industrial quarter.

Proposed Mongolia Bank.—According to a recent issue of the "Torgovo-Promyshlennaya Gazeta," Petrograd, the Russian Minister of Finance has finally approved the formation of a national bank of Mongolia by a financial group in which the Siberian Commercial Bank is largely interested. The capital has been fixed at 1,000,000 rubles ($515,000), and the directorate of the bank is to be in Petrograd, with branches at Urga, Uliasutai, and Kobdo. The Mongolian Government is to receive 15 per cent of the net annual profits, and will possess the right to purchase the bank upon the expiry of 50 years from the commencement of operations.

Russo-Japanese Bank Plan.—According to Japanese press reports said to emanate from Shanghai, the establishment of a Russo-Japanese bank is on foot among some Russian and Japanese bankers. A certain Russian banker, who was once a director of the Bank of Russia, is said to be negotiating with the officials of the Shanghai branch of the Bank of Russia for the purpose.

Banks Make Many Loans at High Interest Rates.—Over Yen 42,000,000 Advanced for Business and new Enterprises. Due to the precautions taken by the bankers the banks are over-burdened with money and are looking for opportunities to invest. This has in turn caused many industrial companies and Municipal bodies to issue loans or debentures of which following is a list issued since the beginning of February up to date:—

	Yen
Japan Industrial Debentures	3,000,000
Ditto, additional	3,500,000
Japan Hypothec Debentures	4,000,000
Ditto, additional	6,200,000
Tokyo-Fu Agricultural Loan	600,000
Ditto, additional	500,000
Kanagawa-ken Agricultural loan ...	300,000
Hyogo-ken agricultural loan	500,000
Ditto, additional	150,000
Tokyo Electric Co.'s debentures ...	5,000,000
Kyushu Water Electric Co.'s debentures	3,000,000
Keihan Electric Light Co.'s debentures...	2,000,000
Fuji Paper Mill's debentures	1,500,000
Kawasaki Shipyard's debentures ...	3,000,000
Wakayama Water Electric Co.'s debentures	1,000,000
Fuji-Ninobu Electric Co.'s debentures	600,000
Osaka Iron Works debentures	1,500,000
Tokyo Municipal loan	5,000,000
Nagoya Municipal loan	600,000

The above loans and debentures make a total of over yen 42,000,000. The rate of interest on these loans and debentures is high, ranging from 6 per cent. to 8.5 per cent. per annum according to the nature of securities.

Despite these high rates, the five leading banks in Tokyo, have lowered interest rates on deposits, to 5½ per cent. per annum for fixed deposits. Other banks are expected to follow suit.

The Tokyo Government has announced a rise in the interest rate on postal savings deposits from 4.2 per cent. to 4.8 per cent. per annum. The rate in Formosa and the Kwantung Leased Territory has been raised by the same Imperial Ordinance to 5.4 per cent. per annum, in Chosen.

Kwangtung Domestic Loan:—The Ministry of Finance has received a request from the provincial Authorities of Kwangtung to permit them to float a loan, for two million dollars, redeemable after six months. The Kwangtung Authorities consider that they have adequate security for the loan and will be able to raise ample funds to redeem the loan, as soon as the financial condition of the Province improves.

Bank Loses Deposits:—The *Asiatic Daily News* says that China is the principal market for Japanese goods, and since the presentation of the 21 demands, the Chinese, who have been actuated by patriotism, have shown decided reluctance in purchasing Japanese goods and doing business with the Japanese. Chinese merchants in Shanghai have hitherto deposited in the Yokohama Specie Bank there, but of late more than $12,000,000 have been withdrawn and deposited in other banks. In Hongkong, a similar situation has arisen, it is feared that Japanese commerce will suffer severely by reason of the ill-will thus created. In the end, Japan will find that all the privileges she may succeed in exacting from China when the latter country cannot resist, will not compensate her for the loss she will sustain through her aggressive policy.

Japan Withdraws Specie:—A wire from London to Tokio reported that the specie reserve in London of the Bank of Japan had decreased by over £3,000,000.

Decrease in Japan's Revenue:—It is learned from official sources that not only the Customs revenue, but also all receipts of national taxes for the fiscal year under review decreased to a remarkable extent with the exception of Income Tax, Business Tax and Sugar Consumption Tax. The receipts of various national taxes for the 1914-15 fiscal year and those in the preceding fiscal year were as follows:—

	1913-14 1,000 yen	1914-15 1,000 yen	Comparison 1000 yen
Land Tax	53,130	52,170	−960
Income Tax ...	26,542	27,717	+1,174
Business Tax ...	27,251	28,493	+1,241
Sake Tax	69,534	60,226	−9,308
Sugar Tax... ...	18,829	20,670	+1,841
Textiles Tax ...	18,064	15,380	−2,683
Customs duties	67,802	41,064	−26,738
Others	18,942	17,323	−1,619
Total	300,098	263,045	37,053

Thus it may be observed that the receipt of 1914-15 revenue at the end of March was a

little over yen 263,000,000 while the corresponding figures for the last fiscal year at the end of March last year were over yen 300,000,000, showing a decrease of over yen 30,000,000. In view of the tendency of Japanese revenue which used to show an increase of about yen 15,000,000 a year for several years past, the decrease experienced for the last fiscal year can be said to be a serious blow to the national finance.

Japan's New Budget.—The annual estimates of the Government for the fiscal year 1915-16, which began on April 1, estimate the annual revenue at 557,191,776 yen, namely 520,106,192 yen ordinary and 37,085,584 yen extraordinary; and the annual expenditure is 491,760,850 yen, or 394,311,639 yen ordinary and 97,769,211 yen extraordinary; with a balance of 65,421,926 yen. This excess is to be spent for the war, and some other outlays also to cover later increases in some items of expenditure above the estimates.

Expenditures both ordinary and extraordinary for each department for the fiscal year 1915-16 are as follows:

Ordinary expenditure—Household Department Yen 4,500,000; Foreign Office, 3,993,333; Home Office, 11,159,062; Finance Office, 169,765,713; War Office, 73,749,742; Navy Office 41,837,854; Depart. Justice, 11,364,006; Education Depart. 9,464,112; Depart. Agriculture and Commerce, 6,840,321; Depart. Communications, 61,637,469; Total, 394,311,639.

Extraordinary expenditure—Foreign Office, 2,196,600; Home Office, 23,666,992; Finance Office, 13,407,167; War Office, 9,386,600; Navy Office, 30,066,335; Depart. Justice, 417,216; Education Depart. 517,412; Depart. Agriculture and Commerce, 6,039,463; Depart. Communications, 11,760,426; Total 97,458,211, a Grand Total of Y 491,769,850.

In the last session of the Imperial Diet, the Navy Office requested the Diet's approval upon an appropriation of 41,331,923 yen, which was an outlay for the war operations of the navy from the beginning of the war till June of this year; but it could not get Diet's approval. The Navy Office defrayed necessary amounts for each month, upon its entire responsibility, 3,816,485 yen in January, 3,534,325 yen in February, and 1,864,107 yen in March, besides 2,248,680 yen for the reflotation of the Asama.

Unauthorised Disbursements.—According to a Japanese weekly newspaper a statement emanated from official circles a few days ago intimating that the Government did not intend to submit to the Diet for its sanction at its coming special session the unauthorised disbursements that have been made since last July. These disbursements in all amount to about 55,000,000 *yen*, with something more to be added on account of the fund appropriated for the relief of the rice market. Of this total 12,510,000 *yen* was paid out in August and September last year and 10,000,000 *yen* between January and March, inclusive, this year, both for war purposes, 5,000,000 *yen* for the relief of silk dealers, 1,230,000 *yen* for new war pensions, and 50,000 *yen* to assist war time marine insurance, and the remaining 26,000,000 *yen* went to cover various deficits of ordinary kinds.

A disbursement of 55,000,000 *yen* without the consent of the Legislature says the editor, is a serious charge on the Government s responsibility, and commonsense, which is after all the greatest fundamental principle of administration, requires it to be investigated at the earliest moment possible. The nation is no doubt prepared to make full allowance for the fact that the Government cannot avoid extraordinary expenditures in an emergency like the one that overtook the Empire in the second half of last year, and also for the circumstance that the Government had to be tied down to a Budget two years old. As given above, however, the total of really unavoidable expenditure in consequence of the war, would appear to be 28,760,000 *yen*, while the balance 26,200,000 *yen* was spent because there was Treasury surplus to draw from, and it is precisely for the Government to establish as soon as possible that the latter was not the case.

Certain technical reasons are advanced for not presenting the unauthorised disbursements for consent at the session. But in the matter of unauthorised disbursements there can certainly be nothing good. Unauthorised implies unconstitutionality, and that in itself constitutes a grave charge. No words have been strong enough for Count Okuma and his Ministerial colleagues to denounce the Seiyu-kai for all its political crimes that were described by them as such. Often and often the Count has said that his aim was to sweep the Government and political circles of all the evil practices and corrupt tendencies accumulative therefrom. Surely unauthorised disbursement is one of, if not the worst, practice under a constitutional regime.

Japanese Banking in 1914.—Bills cleared at all bankers' clearing houses throughout the country last year are valued at $5,088,792,252. These figures are a decrease by $73,056,260. The principal decreases are as follows:—

		Percentage
Tokyo	— $46,743,444	— 4.8
Osaka	— 23,891,566	— 3.9
Kobe	— 52,225,623	—22.4
Kyoto	—110,143,013	—17.1
Yokohama ...	— 81,031,500	—29.8
Nagoya	— 10,350,033	—17.7

Japan's Local Loans.—According to the latest official announcement at the Home Office, the total amount of loans of the local public bodies as at the end of the fiscal year 1914-15 was 316,062,000 yen,of which 139,020,000 yen are domestic loans and 177,610,000 yen are foreign debt. Compared with the figures at the end of the previous fiscal year, the amount shows an increase of 9,660,000 yen.

Philippine Finances.—How the government finances stood in 1914 as compared with 1913 is shown in the annual report of Insular Treasurer J. R. Manning which states that the general treasury balance decreased P4,410,000 during the year, while depository accounts were reduced by P3,100,000. The silver certificate reserve account increased from P30,045,570, to P33,898,721.50.

At the close of business on December 31, last, the insular treasurer was accountable for P55,203,305.02.

Referring to banking operations a comparative statement of resources and liabilites of commercial banks shows an increase over 1913, of P2,893,937.72 in total resources; a decrease of P204,115.37 in loans and discounts; an increase of P2,595,669.51 in overdrafts; an increase of P3,543,199.70 in current accounts; and a decrease of P2,901,437.00 in fixed deposits. As to the Agricultural Bank, long time mortgage loans were made to the amount of P1,330,230, making a total of P4,073,200 outstanding December 31, 1914, as compared with P2,742,970 in 1913.

The Postal Savings Bank has now P446,848 for loans on real estate in the cities of Manila, Cebu, Iloilo, and Zamboanga. All property upon which loans may be made must have registered titles. The bank already has loaned P750,000 on real estate.

Philippine Realty Sales:—Coincident with the democratic administration of the Philippines and the new era, the past two years have seen a steady falling off in real estate transactions, accompanied by a corresponding increase in mortgages issued. The figures follow:

	1912	1913	1914
Simple sale	5,620,469.54	4,504,031.58	3,387,744.78
Mortgage	4,852,217.88	5,744,502.54	6,833,665.80

Straits Currency:—The whole amount of currency notes in circulation in the Colony at the end of January was $48,517,648. The coin portion of the Note Guarant e Fund, including depreciation fund money, on January 31, was distributed as follows: gold in the Colony $2,805,514; gold in London $10,331,799; and silver in the Colony $12,915,581—a total of $26,052,902. The investment portion is stated at the value of the securities as they were quoted at the end of July, 1914, namely, $22,546,214.

MINES AND MINING

New Gold Area in Philippines.—According to an official report of the Bureau of Science at Manila, the division of mines has received a number of inquiries concerning the discovery of gold near Iligan, Mindanao, which was recently reported in the FAR EASTERN REVIEW. The original discoverer of the new field is Major Allen Smith, Jr., Philippine Scouts, who has courteously released to the public certain information supplied by him to the Bureau of Science.

Major Smith is somewhat familiar with the gold-bearing conglomerates which are the source of the gold produced in the famous Rand district in South Africa. Consequently, when he encountered an extensive formation of conglomerate in the course of a hunting trip on Dekelan River he was at once interested and procured a sample of the rock which he forwarded to the Bureau of Science for assay. The assays proved the presence of gold in the particular sample submitted and on receipt of his assay report Major Smith proceeded to examine the conglomerate more carefully. The original discovery was made November 22, 1914.

According to Major Smith, Dekelan River is a tributary of Mandalug River, and this stream in turn flows into Iligan Bay about 5 kilometers north of Iligan, Mindanao. It is to be noted, therefore, that the new gold find is not in the valley of Cagayan River which has long been known to carry gold and whose placers have been described by both the Spanish and the American mining offices, but lies on the western slope of the range which separates the valley of Cagayan River from Iligan Bay. The claims which Major Smith and his associates have located are situated about 18 kilometers east-northeast of the town of Iligan.

The conglomerate in question judged by the samples submitted to the Bureau of Science is identical in appearance with the ordinary conglomerate which is found throughout the Philippines in the Miocene sedimentary rocks. The pebbles are small and well rounded and represent practically all types of common Philippine rocks. The cementing material is usually sandy, but varies in character; some of the samples received contain a large proportion of coral and are cemented by calcareous material. Other types of marine fossils are also found in the conglomerate. The conglomerate is fairly well indurated and hard, but the gold values are not the result of secondary mineralization; they are original components of the conglomerate and consist of fine smooth flakes of free metal.

Major Smith estimates the thickness of the conglomerate beds as exposed in the river walls on the discovery claim at from 15 to 100 meters. The formation extends for several hundred meters at right angles to the course of the river and throughout the length of the claim along the river. These dimensions make Major Smith's estimates of tonnage enormous.

The division of mines, Bureau of Science, has performed 28 assays on samples said by Major Smith to have come from his claims. Nineteen of these assays show values high enough to make an ore of this character

commercially valuable. Two assays show values greater than 50 pesos per metric ton, and 17 range from about 6 to about 30 pesos per ton. Of course, everything depends on whether or not the samples submitted really represent the average ore, and those interested should assure themselves that their samples are intelligently taken and that a sufficient number are secured to represent their holdings accurately. The Bureau of Science will send a mining engineer to the new district during the month of May.

Conglomerate is not a common source of gold in the Philippines and hitherto when gold has been found in Philippine conglomerates the quantity detected has been too small to be important. Harry M. Ickis, formerly an employee of the Bureau of Science, suspected the presence of gold in extensive conglomerate beds just east of the new field at Iligan in 1907 and commented on the possibility in Mineral resources for 1907 as follows:

"The Monteses wash a small amount of gold from the gravel in the bed of the Cagayan River and from small swales and gullies in the conglomerate where the elements have concentrated the gold, which doubtless occurs in small quantities through the conglomerate beds."

Mr. Ickis's attitude in this case has been the general attitude toward Philippine conglomerates, that is, if they do contain gold the quantity present is too small to make the rock a valuable gold ore. And it should be added in a spirit of caution, this belief is generally correct. If conglomerate gold ores come to be exploited in the Philippines, operations will undoubtedly be extended over limited areas only. The great mass of the conglomerates over the Archipelago will yield no returns.

Gold Shipments to Manila.—When the inter-island steamer Bustamante made her last trip from Cebu to Manila she carried gold from the mines of that section. One box of gold ore valued at P33,000 was consigned to the Colorado Mining Co., another valued at P21,000 went to the Bank of the Philippine Islands, and a third valued at P8,000 was consigned to the Keystone Mining Co.

U. S. Army Coal Contract.—The contract for the army supply of coal has been awarded to Mitsui Bussan Kaisha of Japan. This contract called for 115,000 tons valued at $1,000,000.

U. S. Antimony Trade.—Much of the United States annual purchase of about 15,000,000 pounds of antimony comes from China. The following statistics for recent fiscal years ended June 30 show direct importations from China:

From—	1911	1912
All countries:		
Pounds...	10,036,401	13,919,164
Value	$541,588	$693,218
China and Hongkong:		
Pounds...	3,182,453	4,646,831
Value	$131,755	$177,663
From—	1913	1914
All countries:		
Pounds...	19,584,624	14,263,629
Value	$1,134,467	$696,362
China and Hongkong:		
Pounds...	6,909,995	4,300,892
Value	$286,455	$190,739

England is credited in the United States customs returns as furnishing nearly half of the imports of antimony, but it is understood that most of this is from China.

Prospecting Eastern Mongolia.—Three parties of geologists, etc., have set out from Peking one to Eastern Mongolia and Jehol, a second to Harbin, and the third to the country along the Great Wall. These experts are charged to locate mines, if any, and to buy up the mine zones It is supposed, says the *Manchuria Daily News*, that the Chinese Government means to steal a march on Japan.

China's Mining Fees.—During 1914, the Superintendent's Office of the First Mining District received registration fees from prospectors and mining developers amounting to $20,531.11.

China's Mining Regulations.—The *Chung-tsin Shih Pao* reports that much attention is being given to mining regulations which, in the opinion of the present Ministry of Agriculture and Commerce, are impracticable. There is a likelihood of these regulations soon being amended. An open-door policy will be adopted with adequate safeguards. The tax will be decreased while the severe restrictions on the investment of foreign capital will be removed. With the exception of a certain amount of supervision there will be no other inconveniences or restrictions imposed.

Japan Acquires Mine.—The Japan-China Industrial Co. of which Baron Shibusawa is the Japanese President, recently acquired the rights for the coal mine at Mingshan in Laoping district in Kiangsi.

Experts to Make Tests.—The Board of Industry and Commerce has sent mining experts to inspect and test two mines, the Zinc Mine in Ma La Ka about 90 li from Ku Cha in Yunnan Province and an iron mine in Kan Hsien of Honan. These mines were recently discovered, are said to be workable and the Board is making an effort to open them by Government funds.

New Mine at Tayeh.—Regarding the manganese mine located on the border line dividing Tayeh from Yanghsin District, a compromise has at last been established between the Hanyang Iron Works and landowners, with the understanding that the former would pay a certain royalty. The Company intends to invest $200,000 for its development.

Foreign Mining Advisers.—The *Shun Tien Shih Pao* says that the Ministry of Agriculture and Commerce has wired to the Chinese Minister in Japan and America asking them to engage mining advisers. When proper persons have been found for the posts, the Ministry of Commerce will sign agreements with them.

"Most Favoured Clause."—The *Peking Jih Pao* reports that the Sino-Japanese Company has written to the Ministry of Finance applying for the privilege of supplying brass or copper to the provinces. The letter says that the Company has learned that the purchase of copper by the provinces is usually arranged by tender, but in consideration of the promise made to the said company that they would be given preference, the purchase of copper should be made from the said company, and that tenders may be invited for whatever amount the company is unable to supply. From the wording of the letter, the Company seems to claim the right to supply copper at their own prices until their stock is exhausted, and it would appear that to them this is the right interpretation of "most favoured nation" clause.

As a result of the failure of the Szechuan Copper Mines to supply the quantity of copper required by the Ministry of Finance the Sino-Japanese Industrial Company, whose tender was adjudged second, has been asked to supply 4,000 piculs. The Company, however, refuses to supply the copper at the price quoted on the plea that the amount now ordered only amounts to half the quantity on which it bid.

Straits Wolfram Shipments.—Where formerly parcels of mixed tungsten and tin ore were exported and smelted as tin ore, the wolfram (tungsten) thereby being wasted, practically all wolframite ore is now separated and is shipped separately. The exports in 1915 constitute a record of 3,897 piculs of wolfram ore, obtained from mixed ore locally produced.

The wolfram exports since 1910 were—1910, piculs 1,579; 1911, piculs 2,815; 1912, piculs 3,155; 1913, piculs 3,470; 1914, piculs 8,897.

In addition to locally produced mixed ore, large quantities are imported from Burmah and lately from the Siamese Malay States and exported after separation, not being included in the above.

The price at the beginning of 1914 was 33s. per unit. It dropped, however in May to 23s. June and July showed an advance to 31s. Practically all wolfram formerly went direct to Hamburg. A few parcels which were sold to London also found their way eventually to Germany, this being the only manufacturing country of Ferro Tungsten and Commercial Tungsten Powder, with the exception of one firm in France.

Dutch India Coal and Tin.—During 1914 the Ombilien coal mines produced 440,905 tons, and the Banca tin mines (Government) amounted to 255,284 piculs (about 15,319 short tons).

F.M.S Tin Exports.—The Senior Warden of Mines announces that the export of tin from the Federated Malay States for December amounted to 4,351 tons, compared with 4,085 tons in November, and 4,615 tons in the corresponding month of 1913. The total export for the past year was 49,042 tons, compared with 50,128 tons in 1914, and 48,250 tons in 1912.

Korean Mines.—The Oriental Consolidated company's output in February was valued at $125,100. Details of the December operations are as follows: ore treated, 28,682 tons; bullion from all plants, $148,216; extraction at the Taracol cyanide plant, 87 per cent. The output in March totalled $145,365. In January, 210 stamps crushed 24,080 tons of ore, and from all processes $136,554 was recovered. The profit was $54,277, of which $21,249 was spent in development and improvements. The Maibong tube-mill plant recovery was 72%, and Taracol cyanide plant 76%. Transport of supplies was interrupted by an epidemic among the cattle.

The Seoul Mining Co., operating the Suan Cencession in Whang Hai province, reports the following results for February: Forty stamps working 27 days crushed, 6,480 tons, total recovery was $62,100, with operating expenses of $25,000, leaving net earnings of $37,100.

Korea's Mining Law.—The British Consul-General at Seoul reports, that revision of the Korean mining regulations is now under consideration. It is intended that the method hitherto employed of giving preference to priority of application for claims will be substituted by a system determining the most suitable applicant. As regards applications by foreigners, sanction has heretofore been granted to individuals, but this will be changed and permission will only be granted to "juridical persons" who establish a head office in Seoul. The old Korean custom of loaning rights will be strictly prohibited.

Sungari Alluvial Deposits.—The Bank of Chosen has been engaged in buying alluvial deposits and in refining the purchases. The bank management has planned to extend similar operations to Manchuria and proposes soon to start buying the outputs there. This plan originated soon after the opening of the Changchun branch of the Bank in September, 1913. The people of this branch submitted a sample of alluvial deposits brought to the market by Chinese to scientific tests, and found that it was not only larger in size than the Chosen outputs, but also it was of a fine quality. "Some of the deposits" says the Manchuria Daily News, "contained 98.2 (?) per cent. of gold." A systematic study of the producing centres and market conditions, was instituted. The chief producing centres are in the Upper Sungari in Huatien and Mengkiang Prefectures. The outputs are first put on the Kirin market and are then brought to Changchun.

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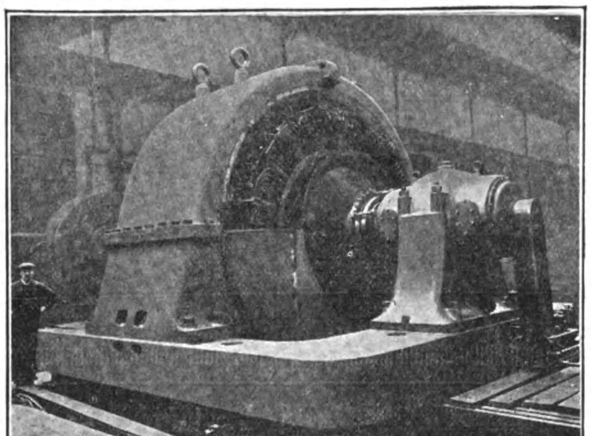

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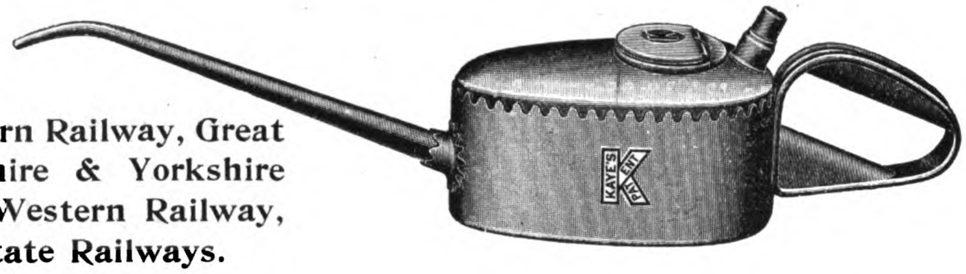

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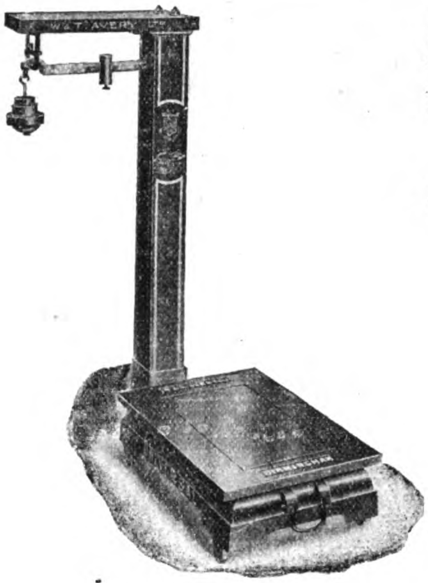

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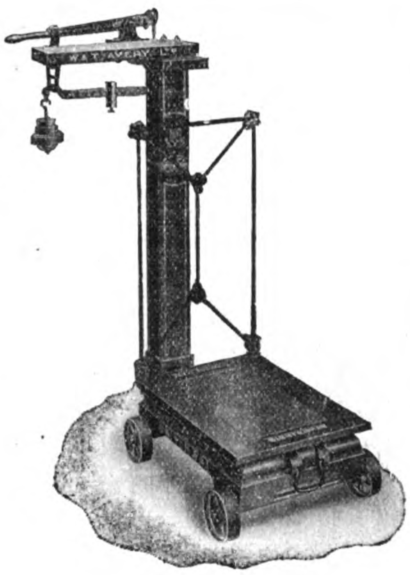

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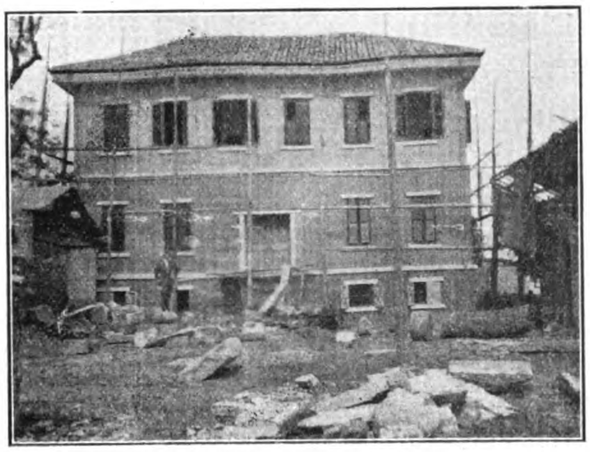

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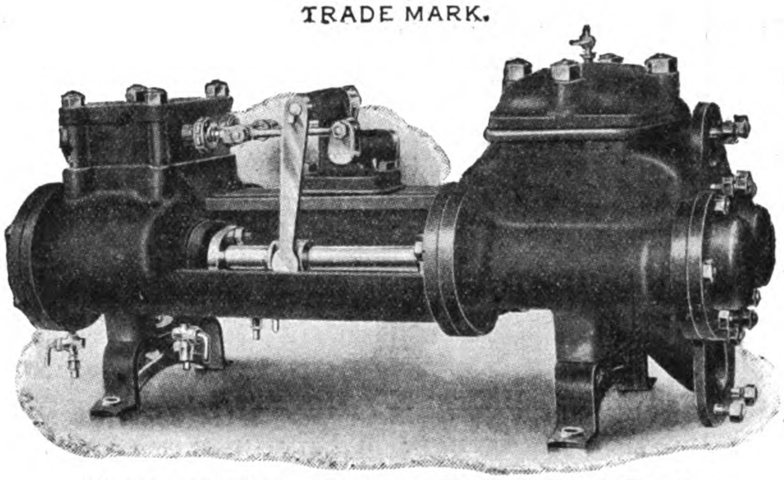

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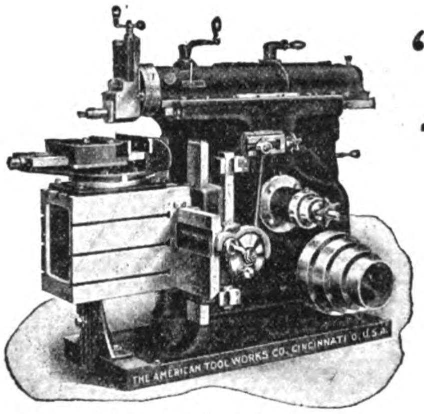

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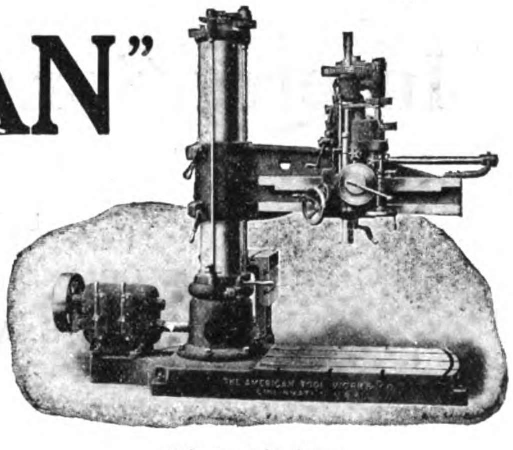

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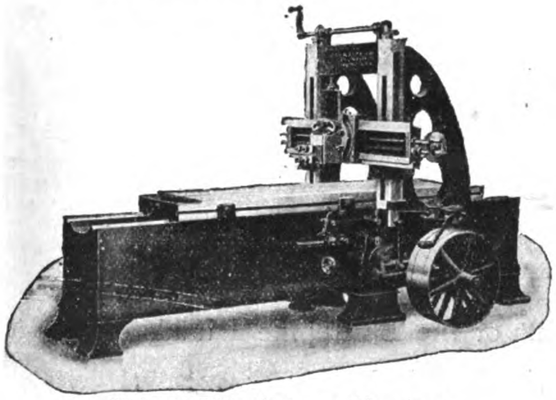

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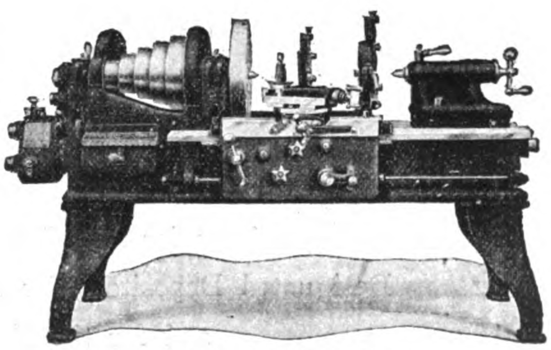

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Capital - - - - Tls. 10,000,000

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Government Bank

(Specially authorised by Presidential Mandate of 15th April, 1913)

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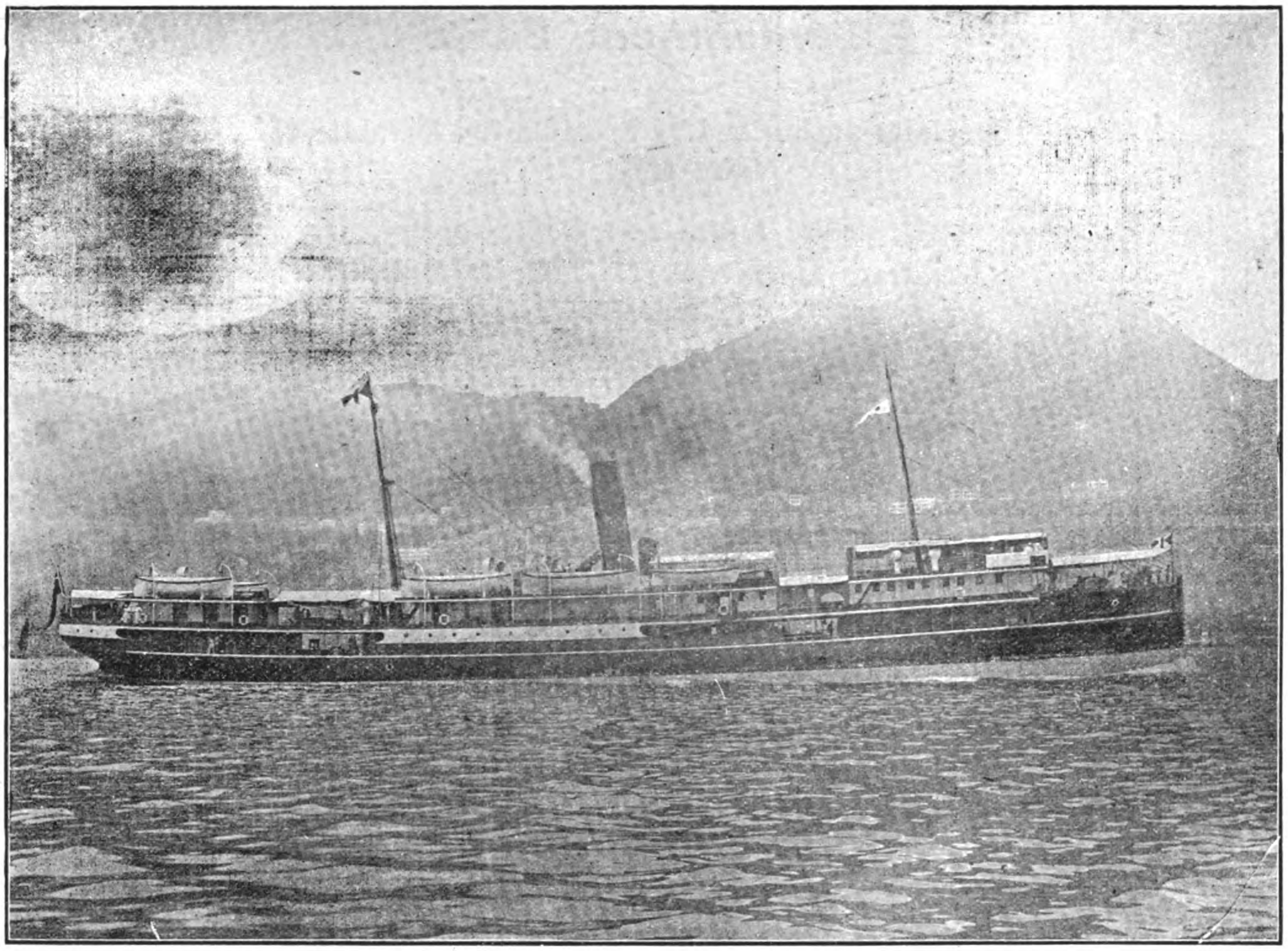

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WORKS COVER AN AREA OF 53 ACRES. DRY DOCK: 787 by 88 feet. DEPTH:—34½ feet
SLIPWAYS: No. 1—1030 feet. No. 2—993½ feet. No. 3—993½ feet.

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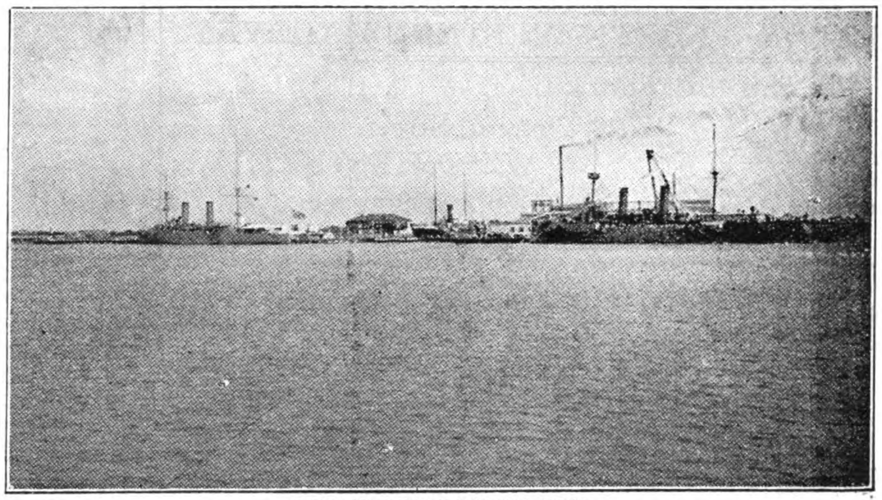

VIEW OF INTERNATIONAL DOCK
showing "M. S. Dollar" in Dock and the Chinese Cruisers "Hai Chi" and "Hai Yung" alongside Dock Co's. Wharf.

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The Model was exhibited at St. Louis Exposition and awarded the Gold Medal in 1904

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The Dock charges are the most moderate in the Far East

The Company's Yards and Docks cover 96 acres. The Water Frontage is about 1½ miles in length. Wharves and Pontoons are arranged where steamers can moor during repairs; and slips for hauling up small vessels are provided. Sheer legs capable of lifting 65 tons are placed at the various Docks.

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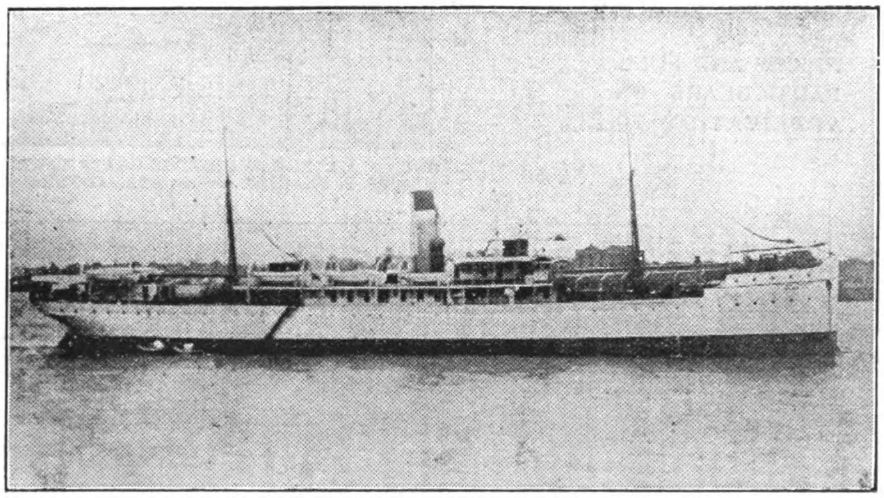

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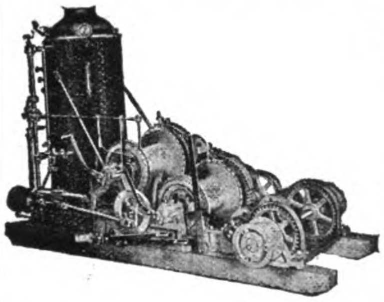

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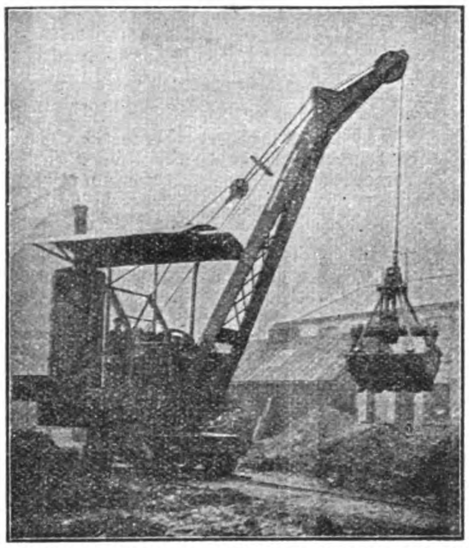
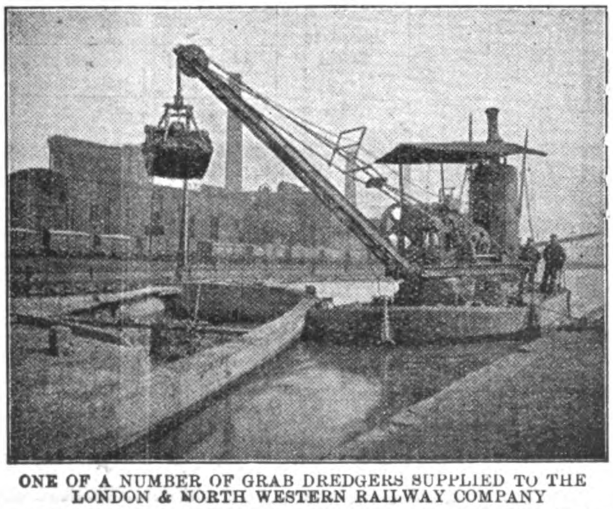
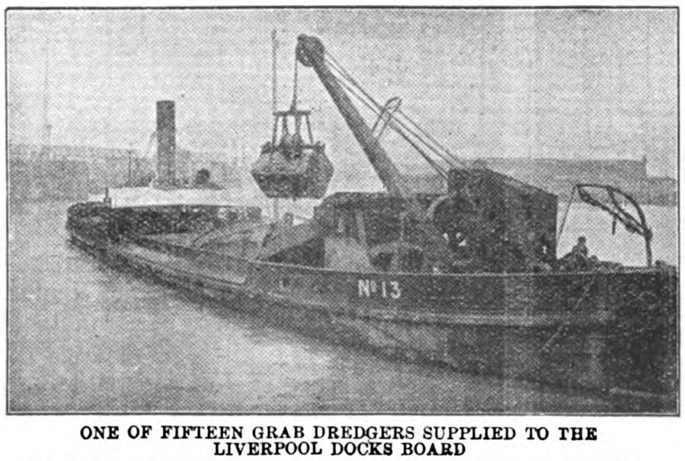


ONE OF A LARGE NUMBER OF GRABS TAKEN BY MESSRS. S. PEARSON & SON, LTD., CONTRACTORS



ONE OF A NUMBER OF GRAB DREDGERS SUPPLIED TO THE LONDON & NORTH WESTERN RAILWAY COMPANY



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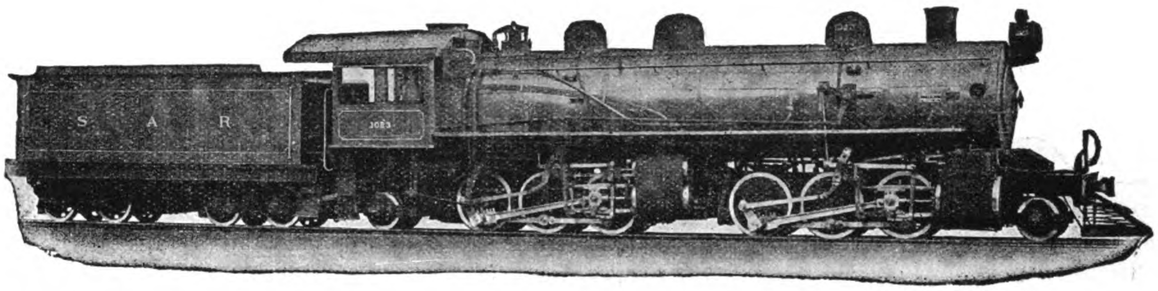
77.7 PER CENT INCREASED LOADS

BY MALLETS ON SOUTH AFRICAN RAILWAYS



Total Weight of Engine, 230,000 pounds; Weight on Driving Wheels 196,000 pounds; Diameter of Driving Wheels 46" Boiler Pressure 200 pounds; Cylinders 18" and 28½"×26"; Tractive Power, 47,700 pounds.

Mallets have greatly simplified the problem of handling the large volume of goods traffic between Witbank and Germiston, on the South African Railways.

These Mallet locomotives are hauling trains of 1,600 tons gross as against 900 tons gross hauled by the locomotives which they replaced, an increase of 77.7 per cent.

The ruling grade is one per cent and in four places there are continuous up-grades of from 3 to 5 miles. The loads hauled probably constitute a record for a 3 ft. 6 in. gauge on this grade. They have eliminated congestion, and reduced the hours of labor of the trainmen.

These Mallet locomotives are the result of years of study, experiment and development. They include only features which have been thoroughly proven in service, skillfully combined in proportions known to be correct.

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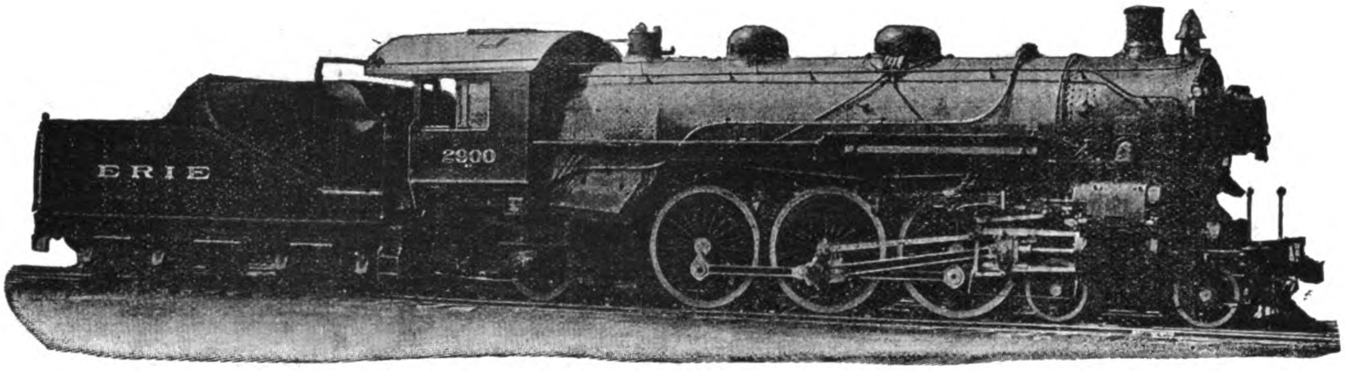
Builders of all Classes Motive Power. Capacity 720 to 1,000 per year



Heavy Pacific Type Built for Erie Railroad

LIMA HEAVY PACIFIC TYPE

This locomotive combines the latest improvements and developments in design, materials and economic devices for saving fuel, etc.

Built for the **ERIE RAILROAD** for heavy fast passenger service where maximum capacity was desired.

General Dimensions as Follows:

Cylinders, 27 × 28 inches	Weight on drivers, 176,000 lbs.
Driving wheel base, 14 ft.	Total Weight, 287,000 lbs.
Total Wheel base, 36 ft. 2 inches	Tractive Power, 40,700 lbs.
Drivers, diameter 79 inches	Factor Adhesion, 4.24
Boiler, straight locomotive type	Superheater, Schmidt
Boiler, diameter 79 inches	Valve motion, Baker

Our **PLANT** is equipped with the latest and most improved machinery, which enables us to build any type or size locomotive required.

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For High or Low Lifts.

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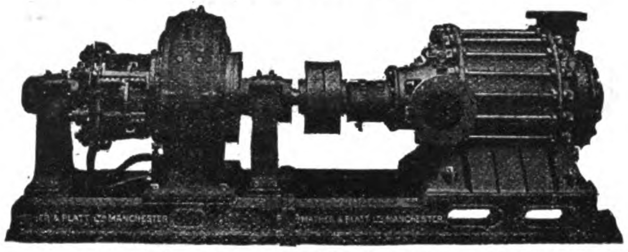

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MOTOR 300 B.H.P. AT 450 VOLTS DIRECT CURRENT, 1,000 R.P.M.

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In wide use throughout the World.
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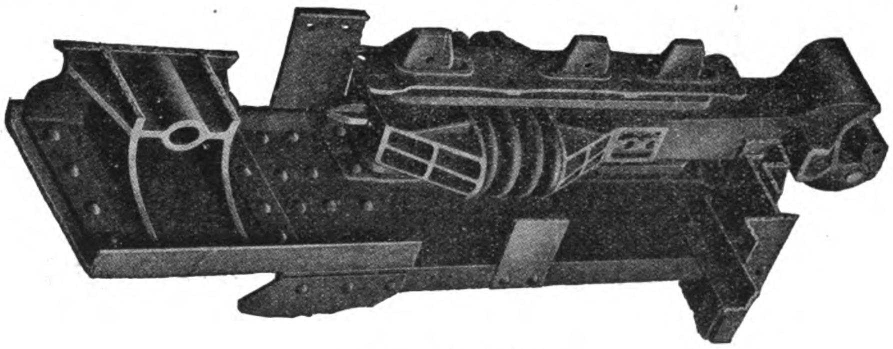
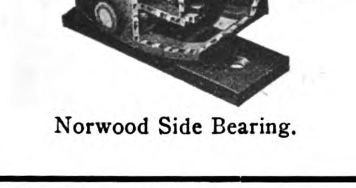


Farlow Draft Gear.



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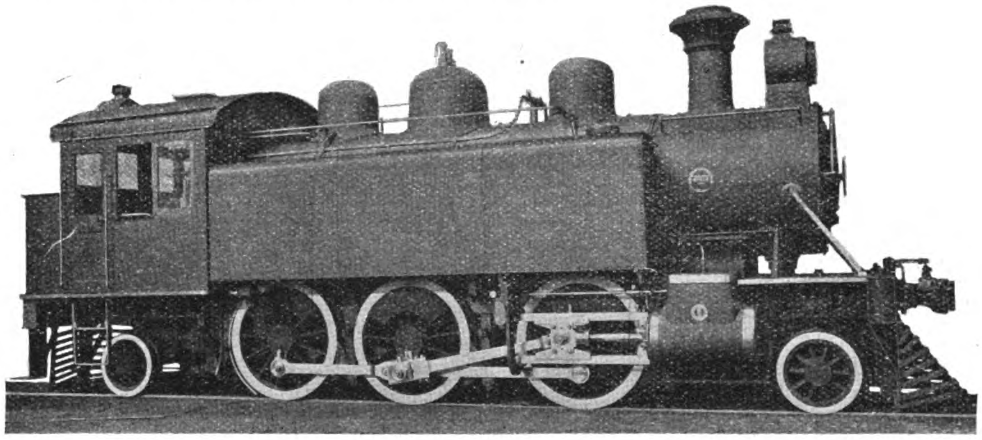
Switching and Local Service

The great the variety of service in which a locomotive can be efficiently used the more useful will the engine prove. This is particularly true in the case of a line having in the service a comparatively small number of engines, as it may be necessary, at times, to transfer them from one kind of work to another.



SIX-COUPLED DOUBEE-ENDER TANK LOCOMOTIVE, PEKING-MUKDEN RY.

Cylinders, 17"×24"	Total heating surface, 1,306 sq. ft.
Driving-wheels, diameter 54"	Weight on driving-wheels, 97,250 lbs.
Steam pressure, 180 lbs.	Weight, total engine, 129,850 lbs.
Grate area, 19.5 sq. ft.	Tractive force, 19,700 lbs.

The locomotive illustrated above is used in switching service, although the design is equally well suited to local service, either freight or passenger. The front and rear trucks are of the radial swing-bolster type, and they are equalized with the driving-wheels in such a way that each wheel finds a bearing, and carries its share of the load, when passing over uneven tracks. The locomotive can be operated with equal safety and facility when running in either direction. This is an advantage in local service, as it is often inconvenient to turn the engine at the end of a trip.

The equipment of this locomotive includes combined steam and hand brakes on the driving-wheels, and pilots, head-lights and automatic couplers at each end. The engine is of American design, and it represents a type which is doing good work on a number of Chinese roads.

Agents for China:—ARNHOLD, KARBERG & Co., SHANGHAI, TIENTSIN, HONGKONG and HANKOW

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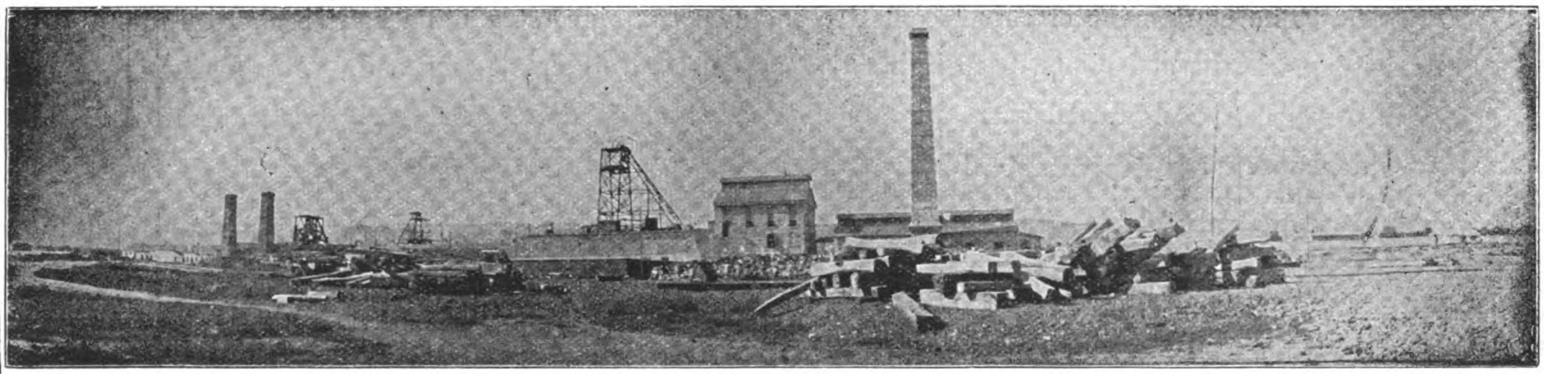
TAOKOU TO CHINGHUA

(CHINESE GOVERNMENT HONAN LINE)



GENERAL VIEW OF COAL MINES ON THE LINE OF THE TAO-CHING RAILWAY

"China's Road of Anthracite"

THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.

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Actual Photograph taken on the Chicago, Rock Island and Pacific R.R., with no other light but the Pyle-National Electric Headlight. The station seen is half a mile from the engine.

A Pyle-National Electric Headlight gives a Great Beam of Clear, Strong, Penetrating Light that distinctly illuminates the Track for Half a Mile Ahead of the Locomotive, enabling the Engine Driver to maintain Schedules, verify Signals and avoid Accidents.

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Four Railroads more than 1,000 each. Twelve Railroads more than 500 each.

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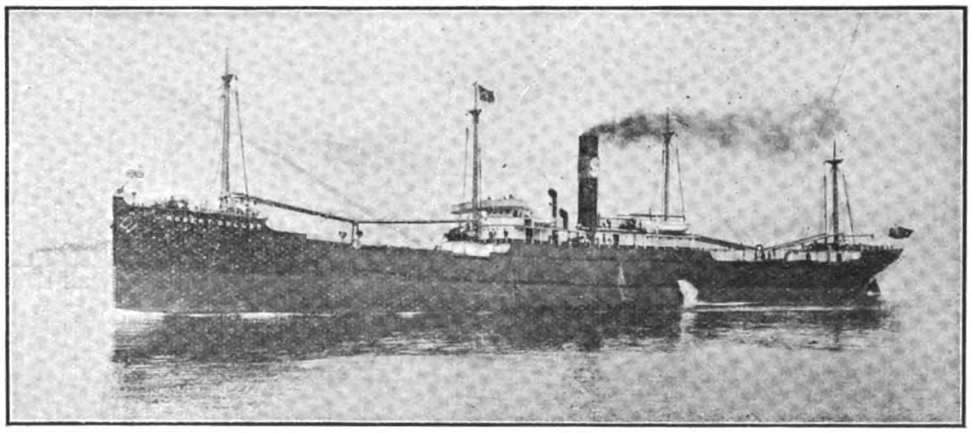


S.S. ROBERT DOLLAR

Steamers:
Robert Dollar
Bessie Dollar
Hazel Dollar
M. S. Dollar
Stanley Dollar
Melville Dollar
Mackinaw
Grace Dollar

HEAD OFFICE,
160 California St., San Francisco, Cal.

CHINA OFFICE,
13 Nanking Road, Shanghai

SOCONY

REG. TRADE MARK

To Manufacturers :-: Mill Owners :-: Engineers.

SOCONY Lubricating Oils are manufactured by the most scientific processes.

Expert refiners prepare each and every grade so that it will give the highest possible amount of efficiency under working conditions

Every ounce of the whole load of your factory comes on the Cylinder and Valves and the best Lubrication you can give them, is not too good.

Idle engines earn no money, but are a constant source of expense. High engine efficiency is only obtained by perfect lubrication with Standard Lubricants.

Although a High Class Oil costs more initially, in the end it is far cheaper, its economical life is longer, its Lubricating qualities greater, and its consumption less.

Railway Lubrication has always been the cause of endless worry to the engineer. The best oils should be used, as exhaustive tests have proved that the cost of coal required to overcome the friction was 3 times the cost of a Cheap Lubricant, and the cost to renew the metal was 6 times the cost of a Cheap Lubricant.

STANDARD OIL COMPANY OF NEW YORK

Lubricating Oil Department

Dealers and Branches all over China

THE

FAR EASTERN REVIEW

THE

BEST ADVERTISING MEDIUM

IN THE

FAR EAST

ENGINEERING :-: FINANCE :-: COMMERCE

Goulds Improved Pump Jack

This pump jack is a geared power attachment for operating any windmill pump standard by belt drive from gas or gasolene engine, electric motor, water wheel, etc.

The jack is so arranged that it can be attached to any pump by simply clamping it to the standard near the base.

By disconnecting the pump lever and bolting the pitman to the windmill rod, the pump can be operated by windmill, hand or engine by simply changing one bolt and adjusting either the pitman or lever on the pump rod.

Send for catalog showing our complete line of pumps.

Fig. 1560—With Pump Standard Bolted in position

THE GOULDS MFG. CO.

Established 1848

LARGEST MFR. OF PUMPS FOR EVERY SERVICE

133 Fall St., Seneca Falls, N.Y., U.S.A.

Andersen, Meyer & Co., Shanghai

Bagnall & Hilles, Gomei Kaisha, Yokohama

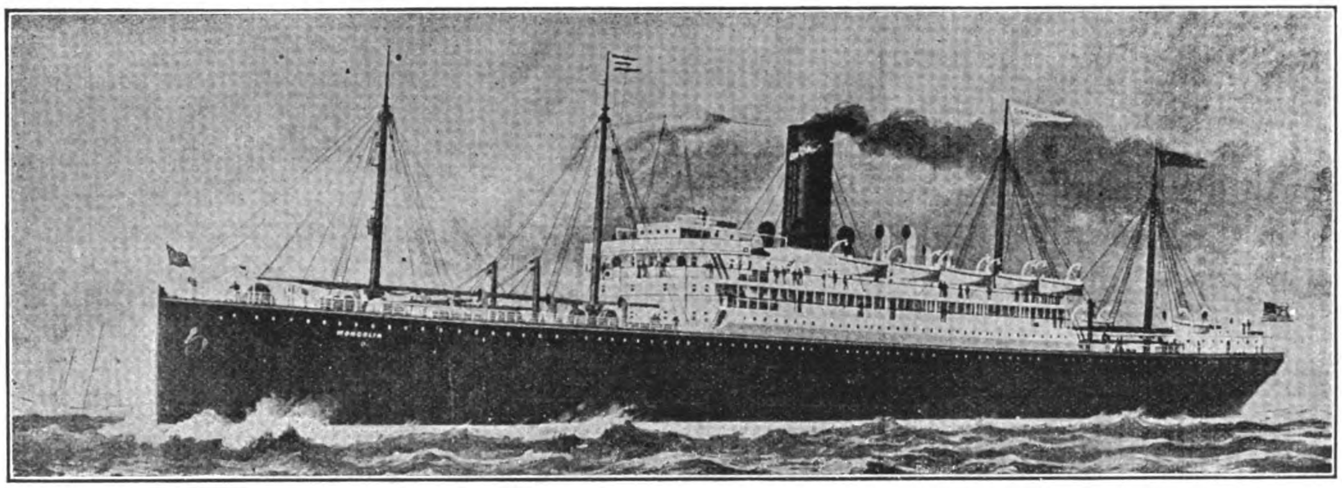
Pacific Commercial Company, Manila

Power Pump Agents

Pacific Mail Steamship Company

THE SEMI-TROPICAL ROUTE

DIRECT SERVICE BETWEEN SAN FRANCISCO AND THE FAR EAST



SAN FRANCISCO, HONOLULU, YOKOHAMA, KOBE, NAGASAKI, SHANGHAI, HONGKONG, MANILA.

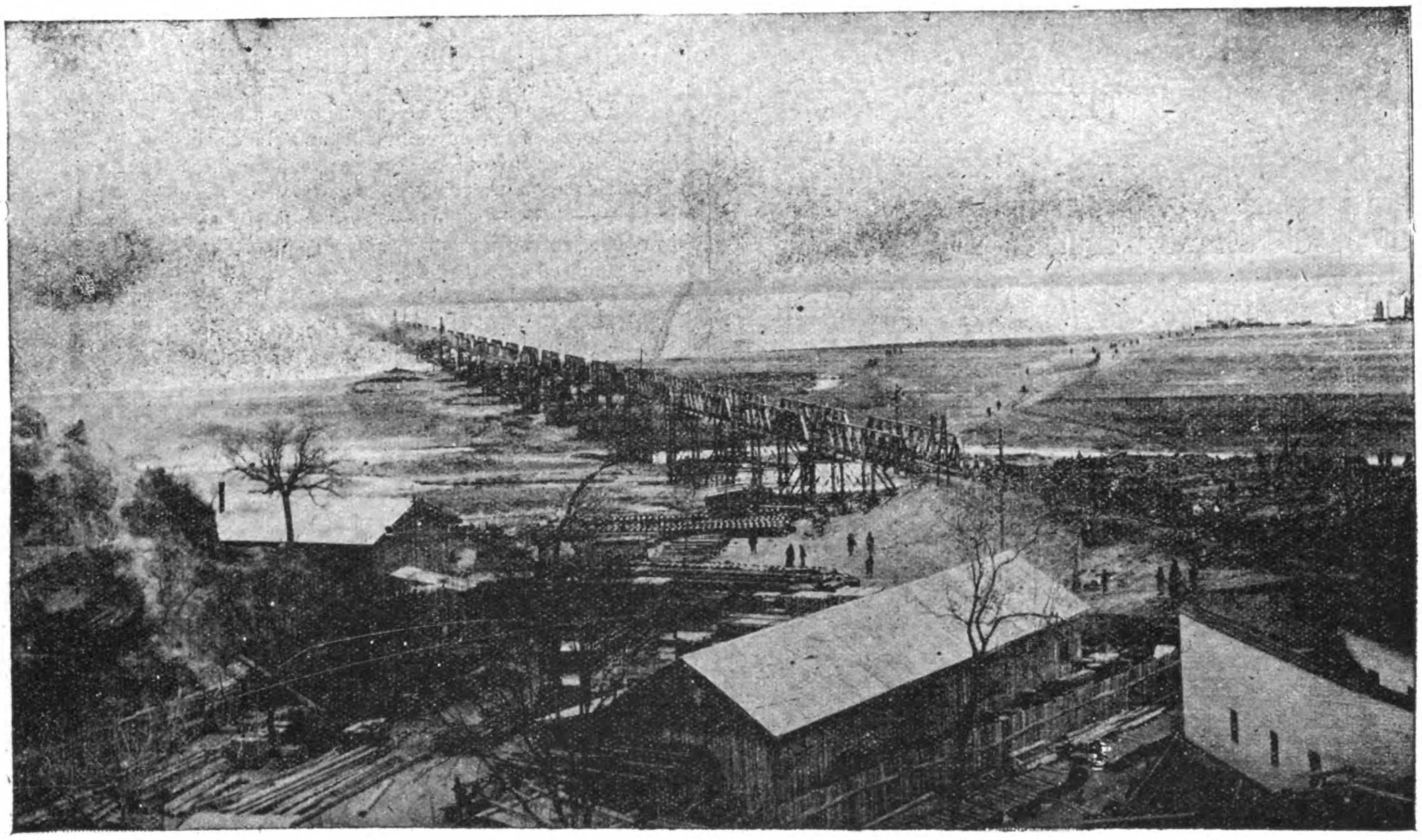
MANCHURIA, MONGOLIA, KOREA, SIBERIA, CHINA, NILE, and PERSIA

Fred F. Connor, Freight Traffic Manager; H. N. Thomas, Acting General Passenger Agent General Office, "Flood Building" San Francisco, Cal.

SIBERIA—Transpacific Record 10 days 10 hrs. (Yokohama-San Francisco)

FEATURES OF THE LINE:—Southern route; passengers enjoy outdoors throughout; deck bathing. The call at Honolulu, Oahu, the most fertile and beautiful Island of the Pacific. The line to San Francisco, the greatest port of the Pacific.

THE PACIFIC COMMERCIAL CO.. SUCCESSOR TO CASTLE BROS-WOLF & SONS, AGENTS, MANILA, P. I.



THE YELLOW RIVER BRIDGE ON THE PEKING-HANKOW LINE

CHINESE GOVERNMENT RAILWAYS

PEKING-HANKOW LINE

"THE ROAD THROUGH THE HEART OF CHINA"

Avoid the Cold and Rough Weather in the Sea Trip between Shanghai and the North by the more comfortable Route up the Yangtsze to Hankow, and from there via the Ching-Han Railway to Peking, where through connections for Europe are made with the Trains de Luxe of the Government Railways of North China.

This line passes through the Heart of the Country and enables the traveller to and from Europe to catch a glimpse of Old China. Ancient walled cities, temples and pagodas are seen from the comfortable seats of the weekly trains de luxe operated by this line. From Peking, the great capital of the oldest civilization in the world, the train departs from the famous Chien-Men and carries the traveller through the historical and legendary portions of the Country, to the modern industrial center at Hankow—the Chicago of China. Connections are made with the Cheng-Tai Railway at Chengtingfu, with the Tao-Ching Line at Sin Siang-sien, and at Chengchowfu with the Pienlo Line.

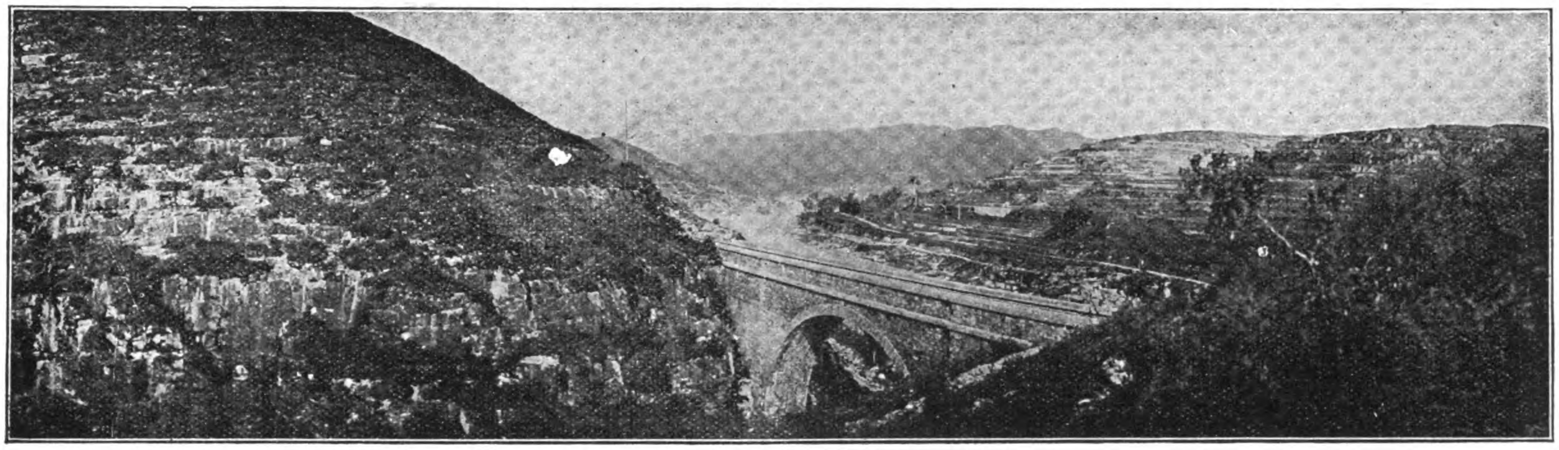
A weekly express train de luxe leaves Peking every Tuesday, and Hankow every Friday, making the trip of over 700 miles in less than thirty hours.

For information apply to any office of the International Sleeping Car Co. or Thos. Cook and Sons.

Chinese Government Railways

The Cheng-Tai Railway

(CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)

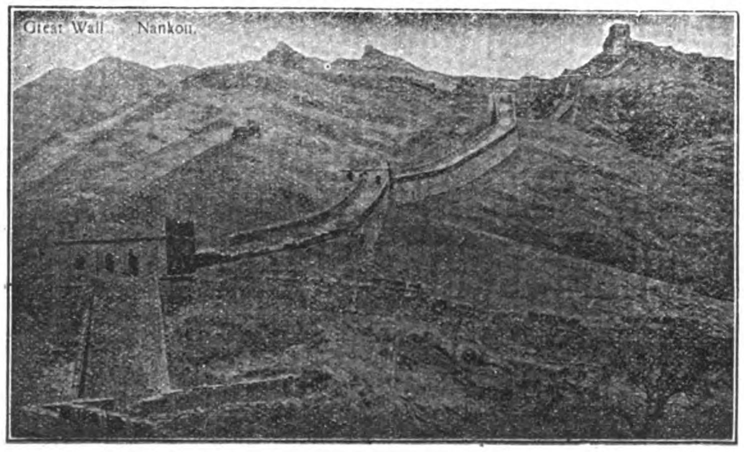


VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

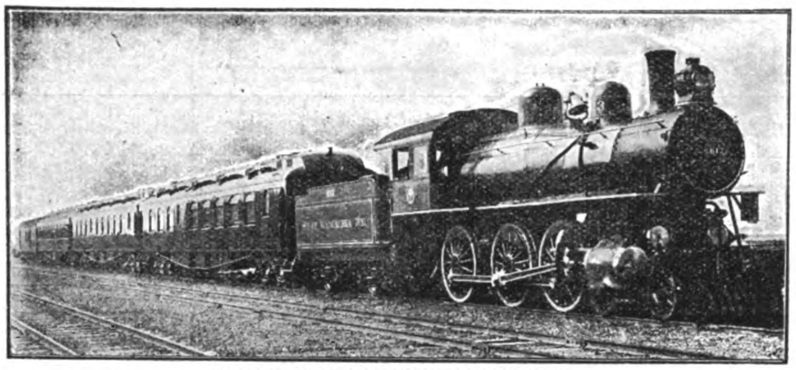
The Peking-Kalgan Line

"THE ROAD TO THE GREAT WALL"



This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

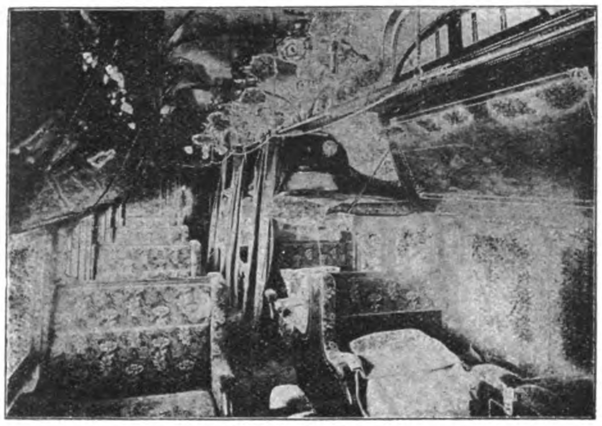
SHORTEST, QUICKEST, AND CHEAPEST ROUTE BETWEEN THE FAR EAST AND EUROPE



THE SOUTH MANCHURIA EXPRESS

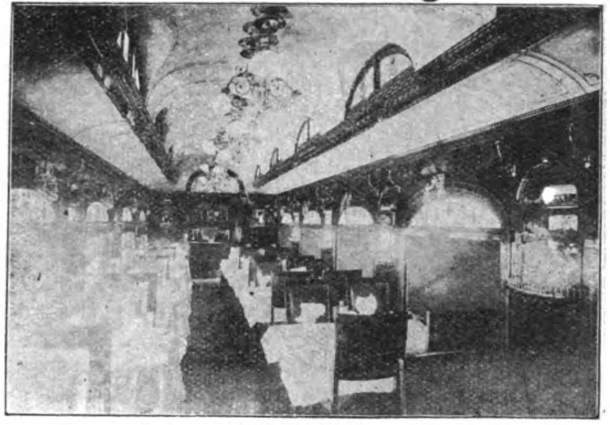
Shanghai to London	in	13½	days
Tokio „ „	„	13¼	„
„ „ Peking	„	3½	„
Dairen „ Moscow	„	8¾	„

South Manchuria Railway



SLEEPING CAR

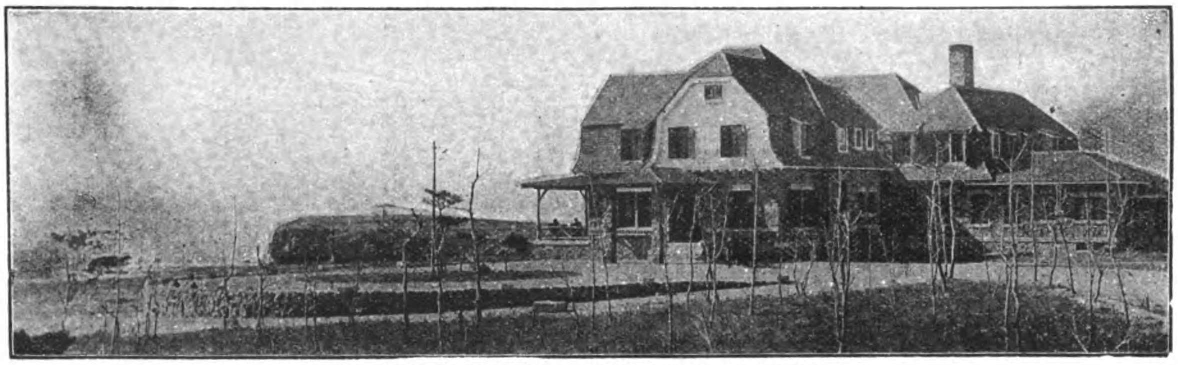
THRICE WEEKLY EXPRESS TRAINS.—Composed of excellently equipped SLEEPING, DINING, and 1st CLASS CARS. Operated between DAIREN and CHANGCHUN in connection with the TRANS-SIBERIAN ROUTE and SHANGHAI MAIL STEAMERS.



DINING CAR

CONNECTIONS AT MUKDEN.—These Express Trains connect at MUKDEN with the PEKING-MUKDEN RAILWAY running via TIENTSIN and with the newly organized MANCHURIA-CHOSEN THRICE WEEKLY EXPRESS SERVICE between Changchun and Fusan; the MUKDEN-ANTUNG LINE (now running throughout on standard gauge) connecting with the KOREAN RAILWAY; by this route the journey between Europe and Japan is shortened by two days, and the sea voyage considerably reduced.

OTHER STEAMER CONNECTIONS AT DAIREN.—Regular Steamship Services are maintained from DAIREN to MOJI, KOBE, CHEMULPO, TIENTSIN, CHEFOO, TSINGTAU, and other ports in Japan and China.

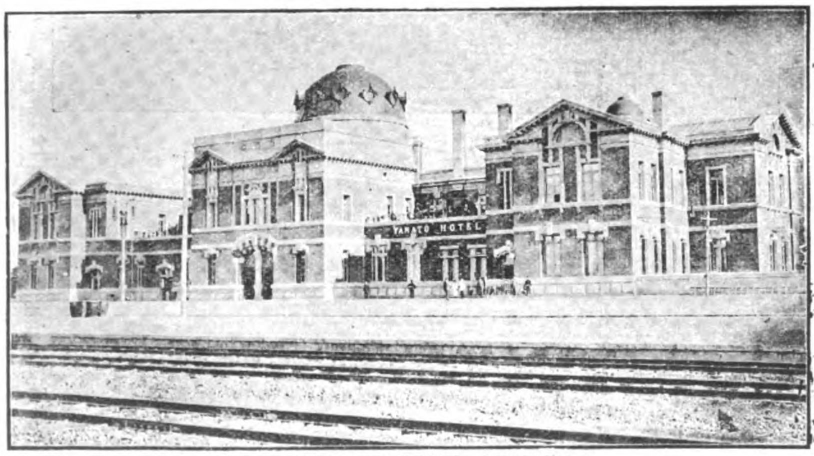


S. M. R. YAMATO HOTEL HOSHIGAURA (STAR BEACH)

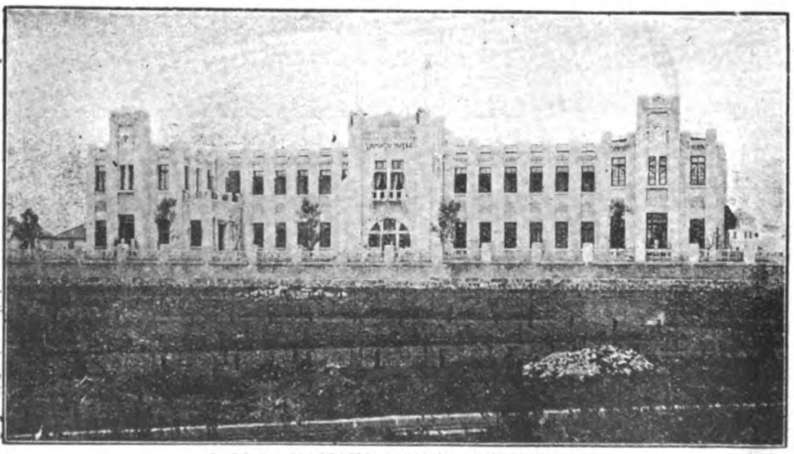
RAILWAY HOTELS.—YAMATO HOTEL (Tel. Add.: "Yamato") at DAIREN, PORT ARTHUR, MUKDEN, CHANGCHUN, and HOSHIGAURA, all managed by the Company on European lines and providing comfortable accommodation.

At Hoshigaura ("Star Beach"), the finest seaside resort in North China, 5 miles from Dairen, in addition to the hotel, there is a large number of bungalows (for hire at moderate terms), situated in a charming cliff garden and surrounded by beautiful scenery.

TICKET AGENTS IN EUROPE AND THE FAR EAST.—The INTERNATIONAL SLEEPING CAR & EXPRESS TRAINS CO.; The NIPPON YUSEN KAISHA, Shanghai; Messrs. THOS. COOK & SON; the REISEBUREAU DER HAMBURG-AMERIKA LINIE; and the NORDISK RESEBUREU. Time-tables, fares, literature, and any information can be obtained gratis upon application to the Traffic Department.



S. M. R. YAMATO HOTEL, MUKDEN



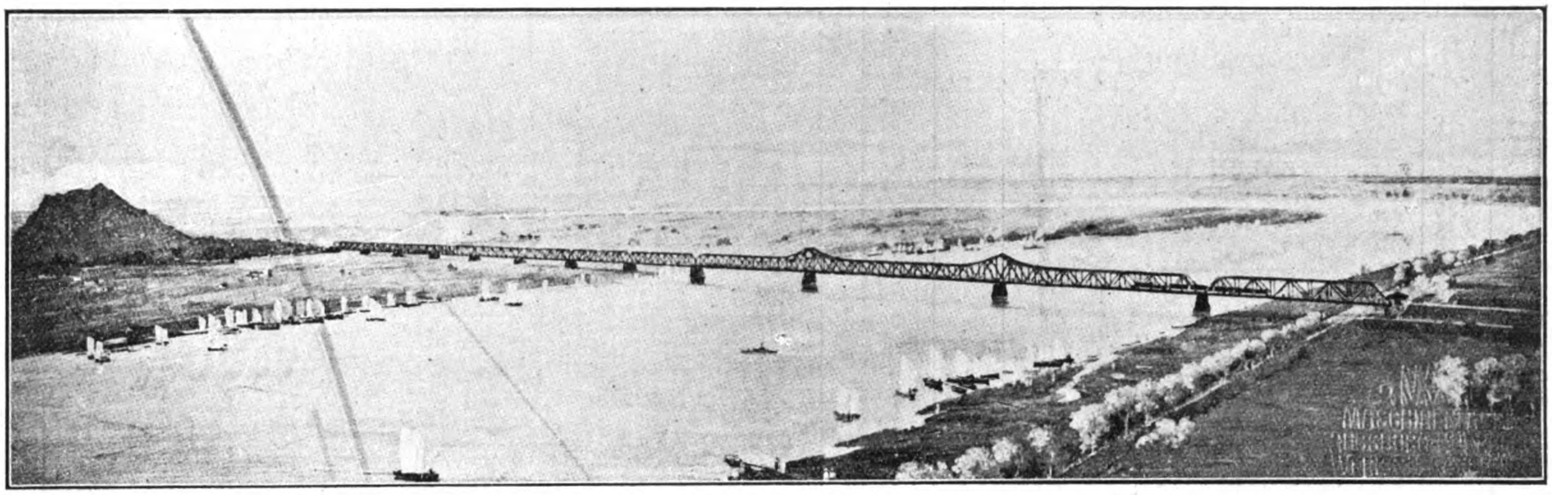
S. M. R. YAMATO HOTEL, CHANGCHUN

SOUTH MANCHURIA RAILWAY COMPANY, DAIREN, MANCHURIA

Tel. Add.: "MANTETSU" -:- Codes: A. B. C. 5th Ed., A-1, and Lieber's

CHINESE GOVERNMENT RAILWAYS

TIENTSIN-PUKOW LINE



THE YELLOW RIVER BRIDGE

Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.

all by rail only.

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the sterotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow is effected by means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to THE TRAFFIC MANAGER, Head Office, TIENTSIN or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

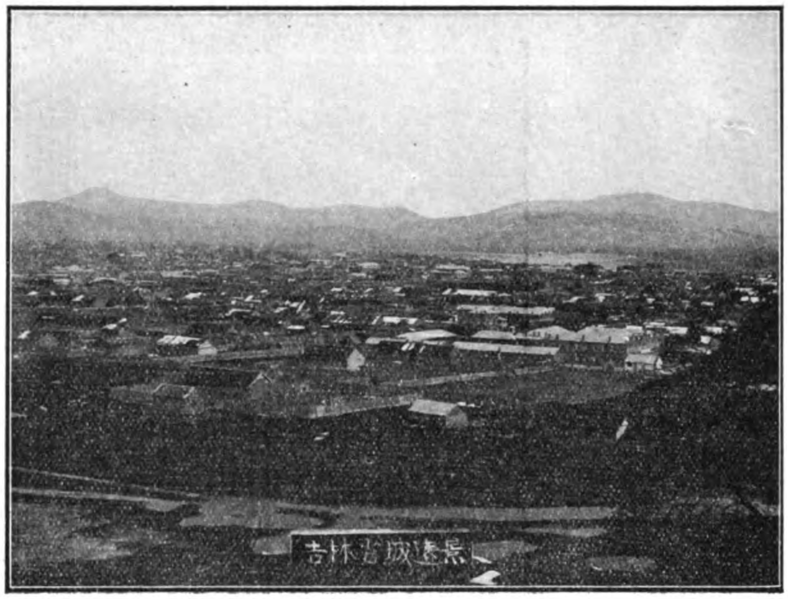
Tientsin, May 1st 1915. **The Tientsin-Pukow Railway Administration.**

中華民國政府吉長鐵路行車時刻表

CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

TIME TABLE.

DOWN TRAINS			STATIONS.		UP TRAINS	
Daily					Daily	
Mixed	Mail				Mail	Mixed
P.M.	A.M.				P.M.	A.M.
2.30	7.30	dept.	TOUTAOKOU	arr.	6.25	10.47
2.38	7.38	arr.	CHANGCHUN	dept.	6.15	10.37
2.45	7.41	dept.		arr.	6.10	10.31
3.20	8.12	arr.	KALUN	dept.	5.40	9.57
3.25	8.14	dept.		arr.	5.38	9.55
3.58	8.46	arr.	YINMAHO	dept.	5.06	9.22
4.02	8.48	dept.		arr.	5.04	9.20
4.17	9.02	arr.	HSIACHIUTAI	dept.	4.50	9.05
4.22	9.04	dept.		arr.	4.48	9.03
4.34	9.16	arr.	YINGCHENGTZE	dept.	4.36	8.50
4.38	9.18	dept.		arr.	4.33	8.48
5.03	9.40	arr.	TUMENLING	dept.	4.12	8.24
5.13	9.50	dept.		arr.	4.06	8.18
		arr.	CHAOCHIATIEN	dept.	3.46	7.58
5.33	10.10	dept.		arr.		
5.57	10.31	arr.	HUAPICHANG	dept.	3.24	7.23
6.02	10.33	dept.		arr.	3.22	7.20
6.18	10.46	arr.	KUTIENTZE	dept.	3.08	7.04
6.20	10.47	dept.		arr.	3.07	7.03
6.38	11.03	arr.	KIUCHAN	dept.	2.52	6.45
6.43	11.05	dept.		arr.	2.50	6.42
7.05	11.25	arr.	KIRIN	dept.	2.30	6.20



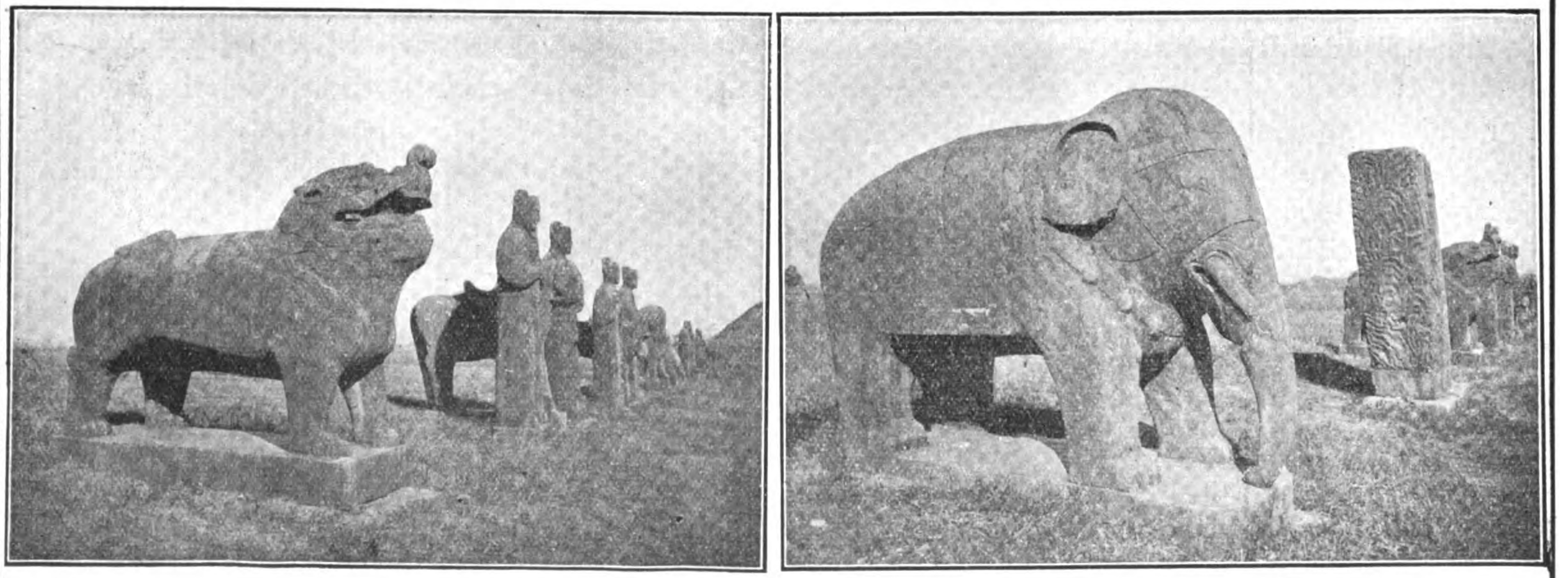
BIRD'S EYE VIEW OF KIRIN CITY

NOTICE:—"dept."=Departure. "arr."=Arrival.
1st May, 1915, and until further notice.

THE PIENLO RAILWAY

(KAIFENG-FU TO HONANFU)

"THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"

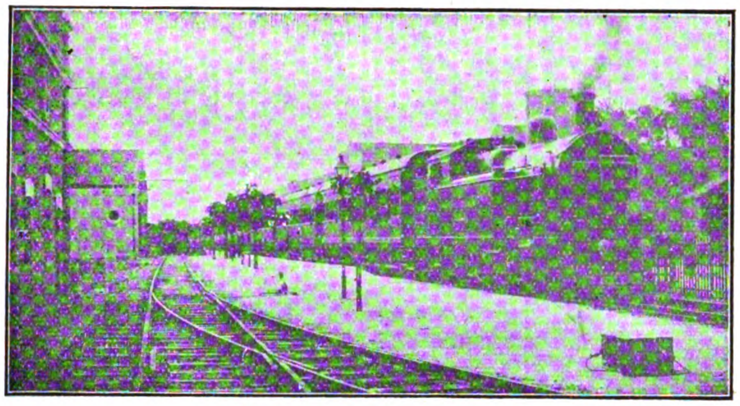


THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

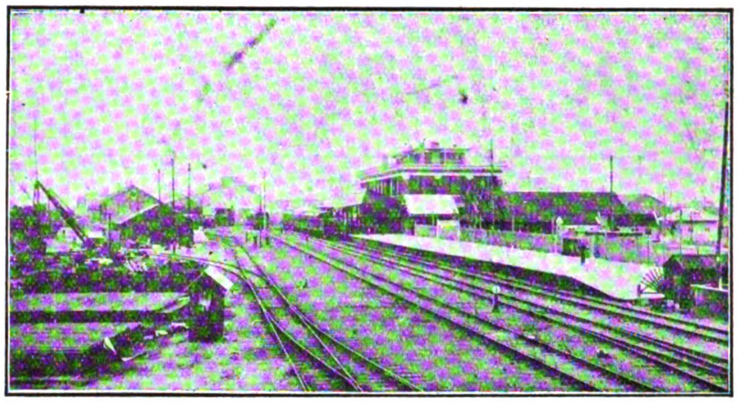
The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

CANTON-KOWLOON RAILWAY

VIEWS ON THE BRITISH SECTION (22 MILES) VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)

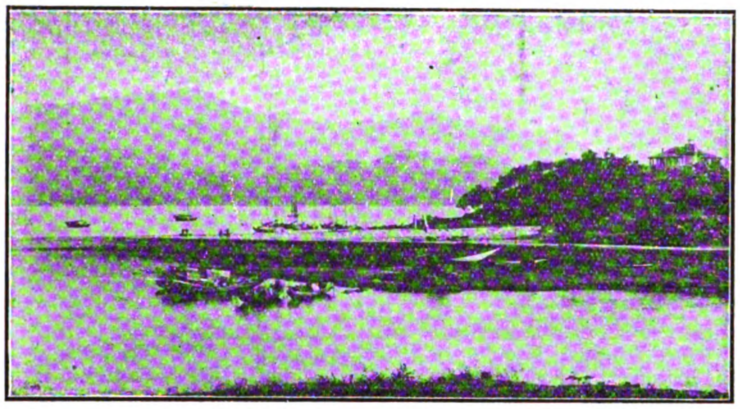


TEMPORARY STATION AT KOWLOON



TAI SHA TAN STATION, CANTON

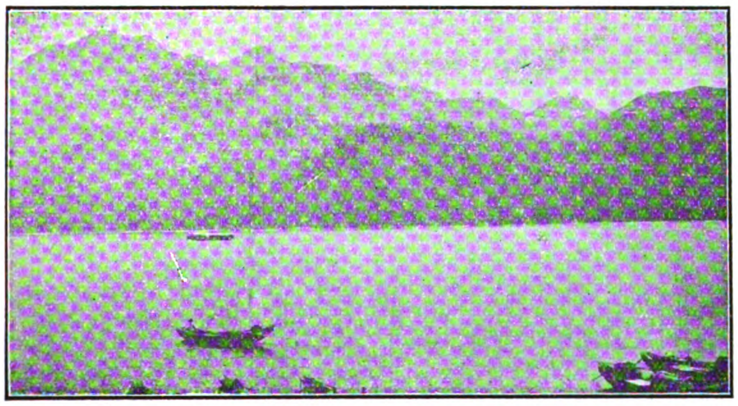
QUICKEST AND CHEAPEST ROUTE BETWEEN CANTON AND HONGKONG THROUGH VARIED AND BEAUTIFUL SCENERY



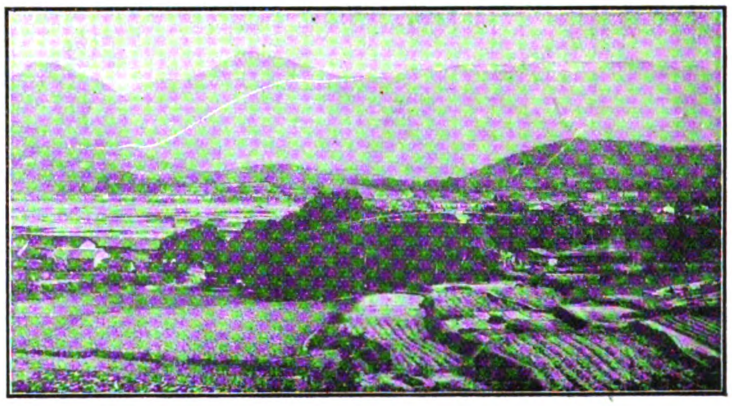
THE "EIGHT GENII RANGE" FROM TAI-PO

NEAR LE LOONG, CANTON-KOWLOON RAILWAY

TWO EXPRESS CORRIDOR TRAINS EACH WAY DAILY HOT MEALS AND OTHER REFRESHMENTS SERVED



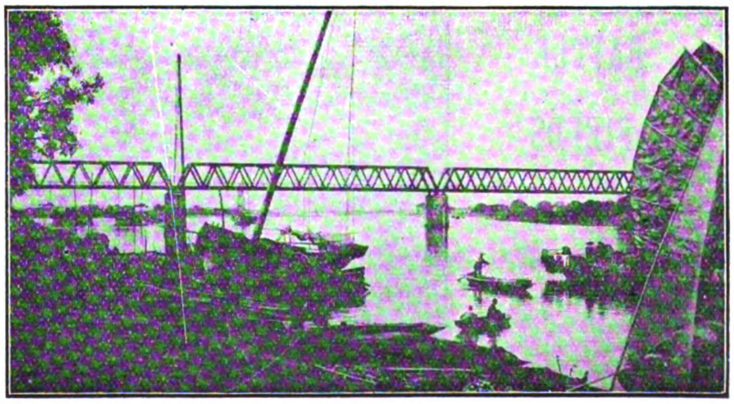
THE HUNCH-BACKS AND PYRAMID HILL



VILLAGES, CANTON-KOWLOON RAILWAY

4¼ HOURS BETWEEN UP AND DOWN TRAINS FOR BUSINESS MEN OR TOURISTS AT CANTON OR HONGKONG

THE LION'S HEAD AND STATUE ROCK, SHATIN VALLEY



EAST RIVER BRIDGE CANTON-KOWLOON RAILWAY

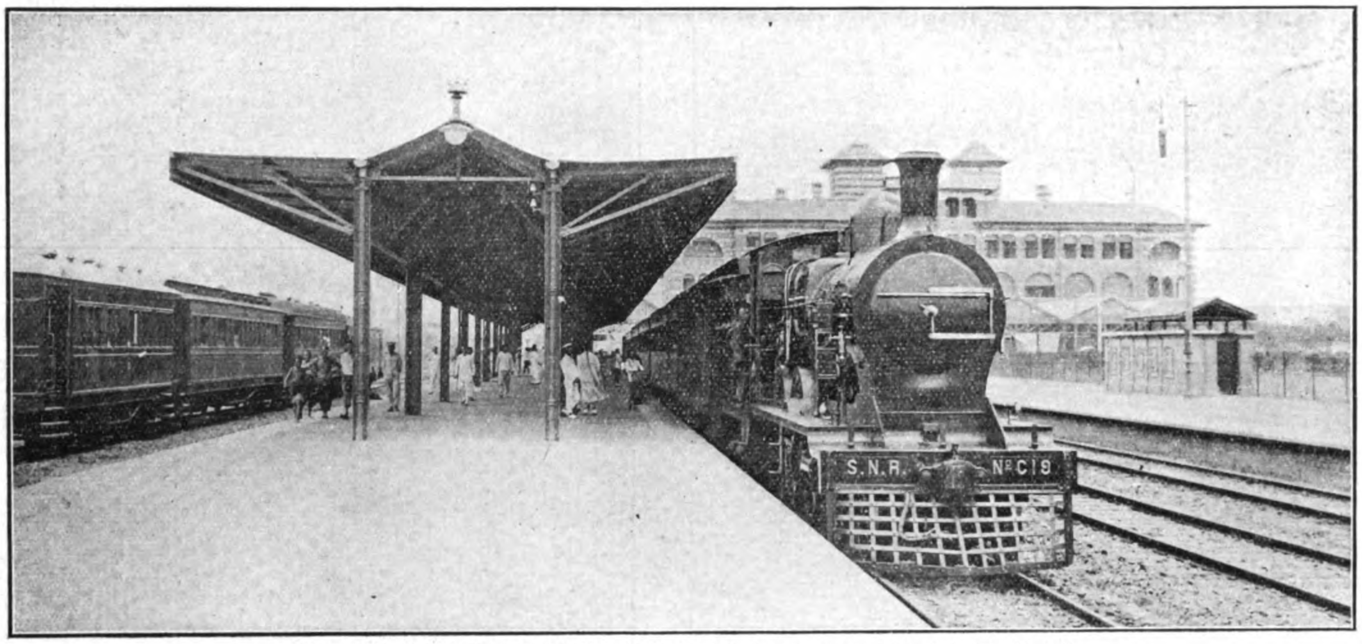
TIME TABLE

Leave Hongkong (Kowloon) 11.25 and 7.42 a.m. & 3.00 p.m.
Arrive Canton (Tai Sha Tou) 6.05 p.m. and 11.20 a.m. & 6.33 p.m.

Leave Canton (Tai Sha Tou) 7.15 and 8.00 a.m. & 3.25 p.m.
Arrive Hongkong (Kowloon) 10.45 and 3.56 p.m. & 6.55 p.m.

Special terms and special trains for large tourist parties. For further particulars see advertisements or apply to
The Manager (British Section) Kowloon, HONGKONG. The Administration, (Chinese Section) CANTON.

The Line of A Hundred Pagodas



SHANGHAI TEMINUS OF THE SHANGHAI-NANKING RAILWAY

THREE EXPRESS SERVICES DAILY, WITH RESTAURANT AND SLEEPING CARS BETWEEN SHANGHAI, SOOCHOW, WUSIH, CHANGCHOW, CHINKIANG AND NANKING

SEE THE NANKING BATTLE-FIELDS

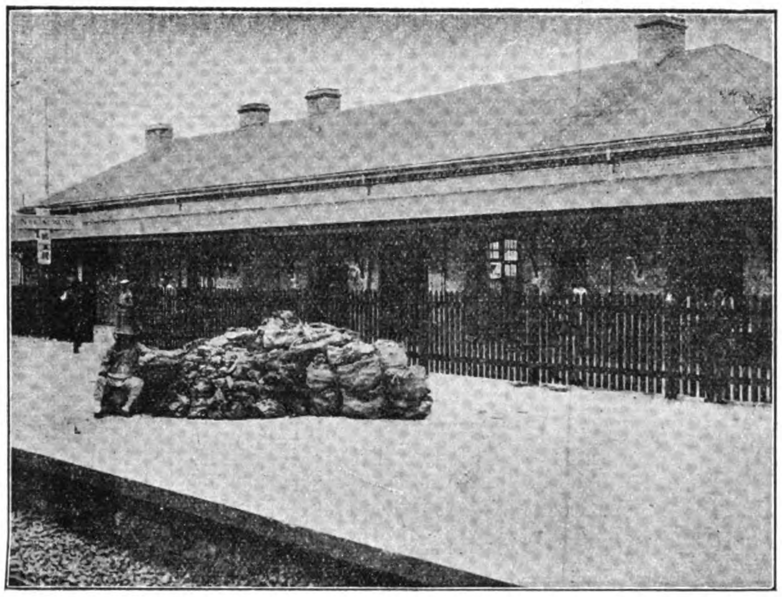
THE WALLS OF NANKING

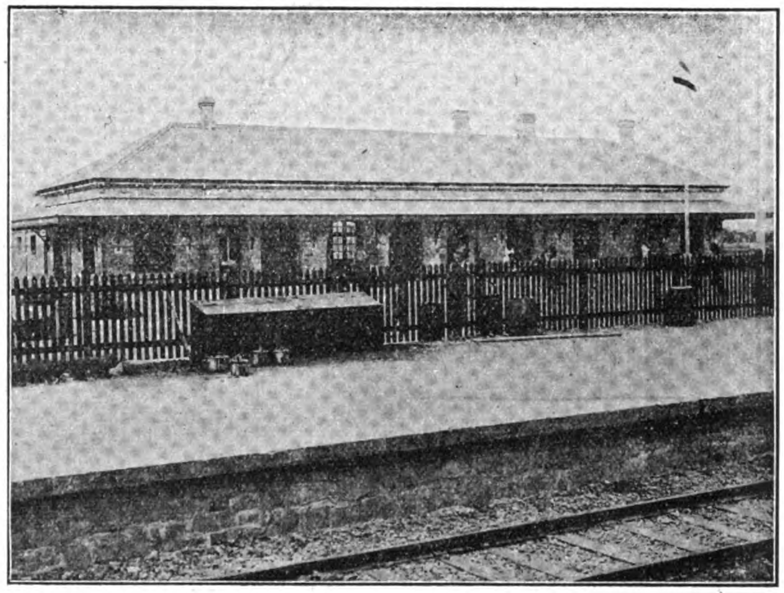
DELIGHTFUL WEEK END EXCURSIONS

CHINESE GOVERNMENT RAILWAYS

TIENTSIN-PUKOW LINE

Express Passenger Train Service





STATION AT LIU HUAI KUAN — TIENTSIN-PUKOW RAILWAY. BRITISH OR SOUTHERN SECTION — STATION AT PENG-PU

UP TRAIN — TIME TABLE — DOWN TRAIN

Stations		Daily Through Mail Service	Stations		Daily Through Mail Service
Pukow	dep.	9.50	Tientsin East	dep.	9.40
Hsuchowfu	„	7.54	Tientsin Cen.	arr.	9.50
Tsinanfu	„	6,30	Tientsin Cen.	dep.	10.10
Techow	„	9.15	Techow	„	4.52
Tientsin Cen.	arr.	3.07	Tsinanfu	„	8.01
Tientsin Cen.	dep.	3.27	Hsuchowfu	„	7.16
Tientsin East	arr.	3.37	Pukow	arr.	4.30

LUGGAGE ALLOWANCE

1st class, 120 catties; 2nd class, 90 catties; 3rd class, 60 catties.

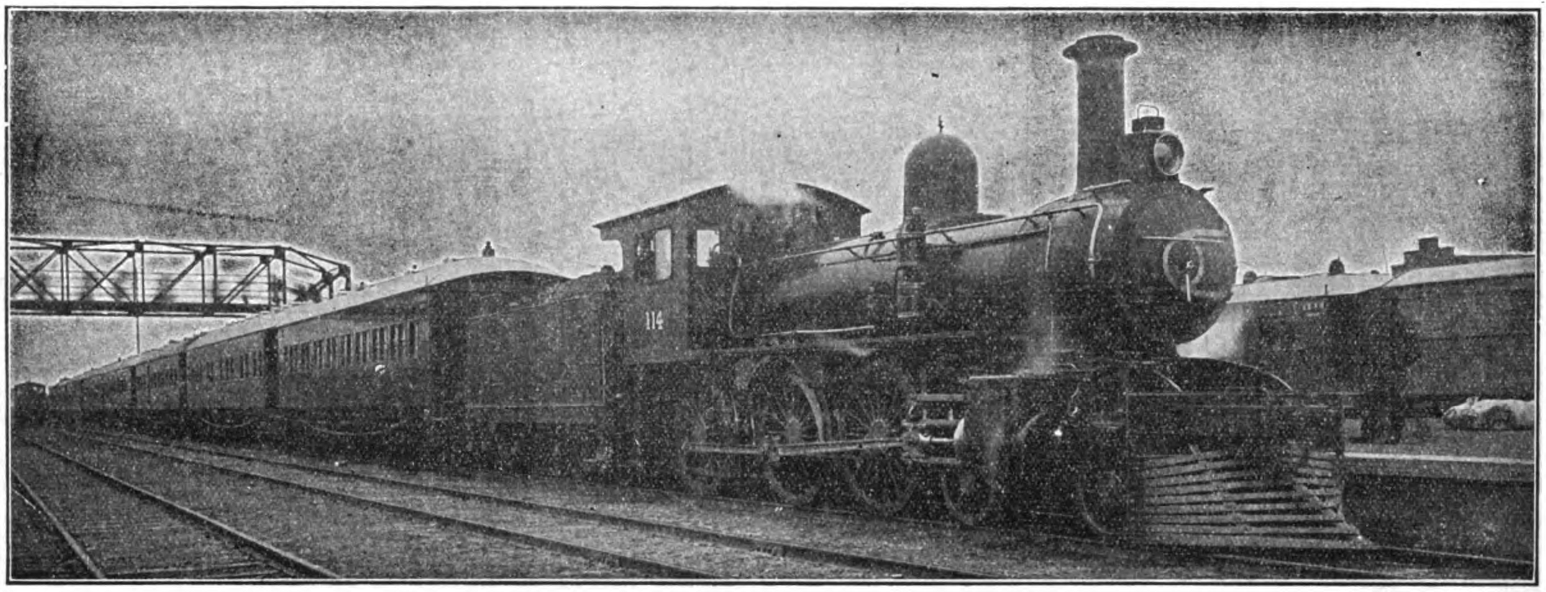
Excess luggage is charged at one (1) cent per picul per mile, minimum charge as for 50 catties.

Only first class passengers are entitled to book sleeping berths, at $5.00 per berth.

The Railway ferry steam-launch, lying at the jetty above the Japanese Hulk, will carry passengers across the river forty minutes before the trains leave. Passengers may book their tickets at the office on the ferry jetty.

The through mail, and the mixed trains running between Pukow-Pengpu, Pengpu-Hsuchowfu, Hsuchowfu-Tsinanfu, and Tsinanfu-Tientsin will continue as before. For time refer to the Time Table.

For further particulars, etc., apply to the Traffic Department at Tientsin or Branch Office, Nanking.



TRAIN DE LUXE AT TIENTSIN SETTLEMENT STATION

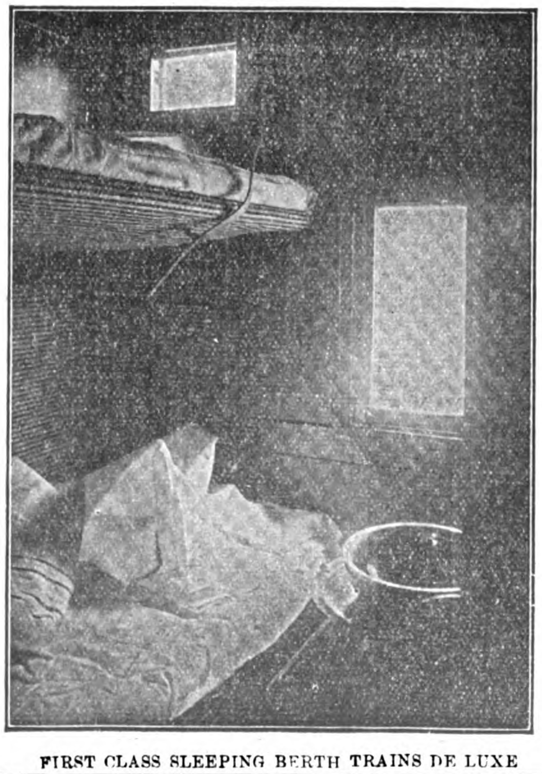
CHINESE GOVERNMENT RAILWAYS OF NORTH CHINA

THROUGH SERVICE FROM PEKING TO MUKDEN, CONNECTING AT MUKDEN WITH THE SOUTH MANCHURIA EXPRESS FROM TRANS-SIBERIAN ROUTE: AT PEKING CONNECTION IS MADE WITH THE PEKING-HANKOW RAILWAY FOR HANKOW AND YANGTSZE PORTS, AND INTERMEDIATE POINTS REACHED BY THE CHEN-TAI LINE TO TAIYUANFU, THE TAO-CHING LINE, AND THE PEINLO RAILWAY TO KAIFENGFU AND HONANFU. CONNECTION IS ALSO MADE AT PEKING WITH THE PICTURESQUE KALGAN LINE, "THE ROAD TO THE GREAT WALL."

THE RAILWAYS OF NORTH CHINA PASS THROUGH THE MOST INTERESTING PART OF CHINA

PEKING: THE CAPITAL, WITH ITS WALLS, PALACES, TEMPLES AND TOMBS.—**TIENTSIN:** THE GREAT TRADE CENTER OF NORTH CHINA. —**TONGSHAN:** THE LARGEST MINING AND INDUSTRIAL TOWN IN THE COUNTRY.—**SHANHAIKWAN:** WHERE THE GREAT WALL ENDS AT THE SEA.—**NEWCHWANG:** THE BUSY COMMERCIAL PORT OF MANCHURIA. —**MUKDEN:** THE ANCESTRAL HOME OF THE MANCHU DYNASTY. A MINIATURE PEKING, WITH ITS WALLS, IMPERIAL PALACES, TEMPLES AND TOMBS.

PEKING STATION



FIRST CLASS SLEEPING BERTH TRAINS DE LUXE

THE THROUGH TRAINS ARE EQUIPPED WITH BUFFET AND DINING CAR SERVICE, AND A COMFORTABLE, MODERN TRAIN DE LUXE OF COMPARTMENT SLEEPING COACHES HAS BEEN PLACED IN OPERATION THIS SEASON TO CONNECT WITH THE THROUGH SERVICE OF THE TRANS-SIBERIAN AND SOUTH MANCHURIAN RAILWAYS

For further information apply to any office in America or Europe of

The Cie. Internationale Des Wagons-Lits, Thos. Cook & Sons, or Railways of North China

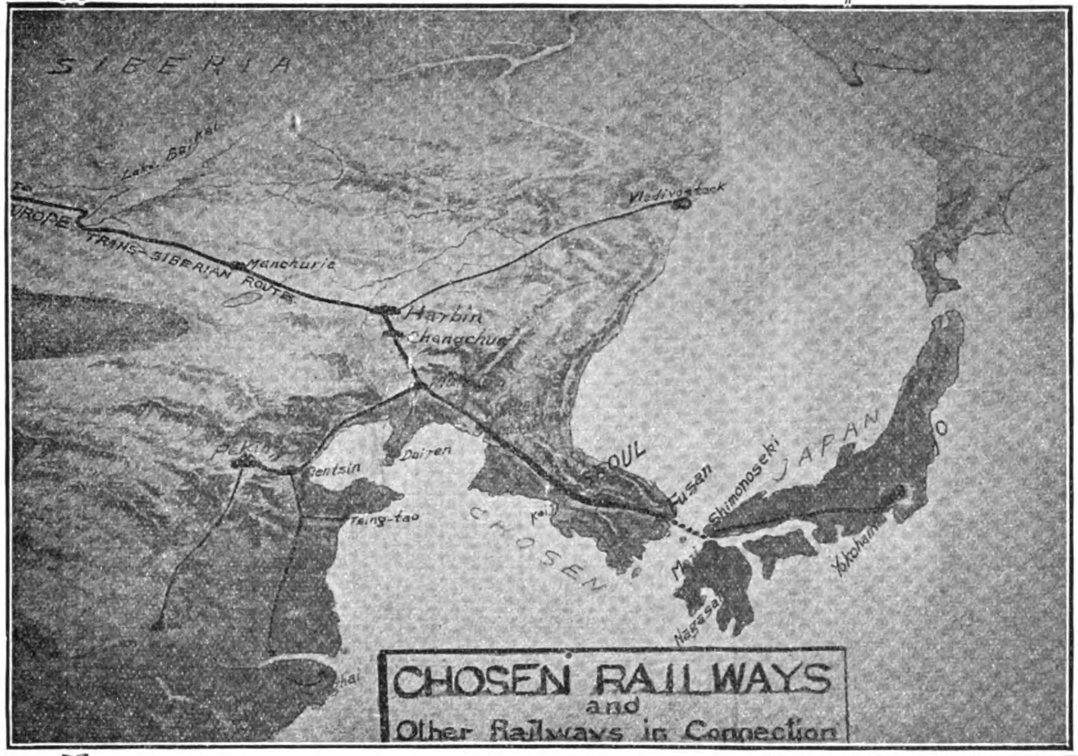
TIENTSIN, NORTH CHINA

By order of Directorate

Chosen Railways

Most Important Link in the Round-the-World Routes via Siberia.
Safest and Quickest Overland Route between Europe or China and Japan.

Only 10 hours, Sea Passage between the Continent and Japan.
Best Opportunities for studying Unique Conditions in the Far East.



Chosen-Manchuria Express

Fusan-Keijyo (Seoul)-Mukden-Changchun

Weekly Service. Most Up-to-date Accommodation: 1st and 2nd Class Sleeping Cars and a Dining Car.

CONNECTIONS:

With the Trans-Siberian Express.
With the Tokyo-Shimonoseki Train de Luxe.
With the Peking-Mukden Train de Luxe.

Daily Express

Fusan-Keijyo-Antung

Twice a day Service, taking all class Cars, besides 1st and 2nd Class Sleeping Cars (Keijyo-Fusan section only) and a Dining Car.

CONNECTIONS:

With trains on the South Manchuria Ry.
With express trains on the Japanese Rys.

Through Traffic

Stations open to through traffic are as follows:—

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Dairen, Changchun, Mukden, Yingkou, etc.

Chinese Eastern Railway.—
Tsitsikar, Manchuria and Harbin.

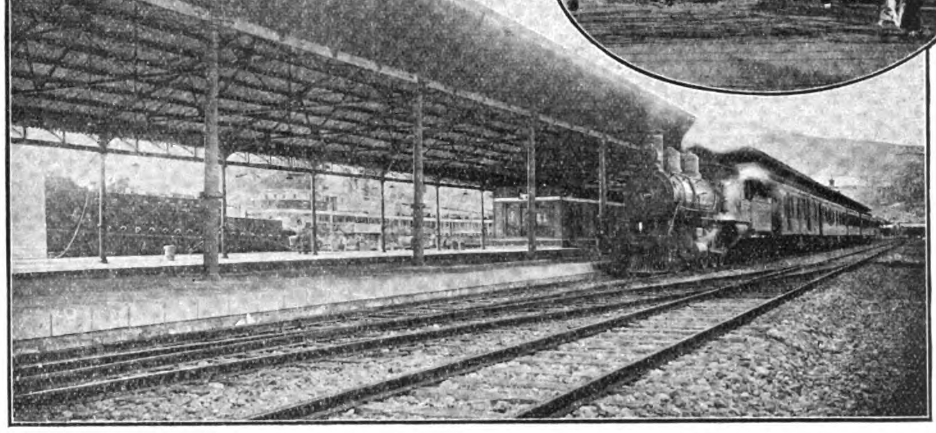
Chinese Government Railways.—
Hsinmingfu, Shanhaikuan, Peking, Tientsin, Shanghai, Nanking, Tsinanfu, Hankow, Nankow and Kalgan.

Russian State Railways.—
Irkutsk, Odessa, Warsaw, Moscow and Petrograd.

Chosen Railways.—
Fusan, Keijyo (Seoul) Heijyo, † Jinsen and † Chinnampo.

Japanese Railways.—
(via Chosen)
Tokyo, Yokohama, † Nagoya, Kyoto, Osaka, Kobe, Shimonoseki, Moji and Nagasaki.

† No through traffic to or from points of the Chinese Eastern Railway and the Russian State Railways.



Fusan Pier

A scene in Keijyo (Seoul)

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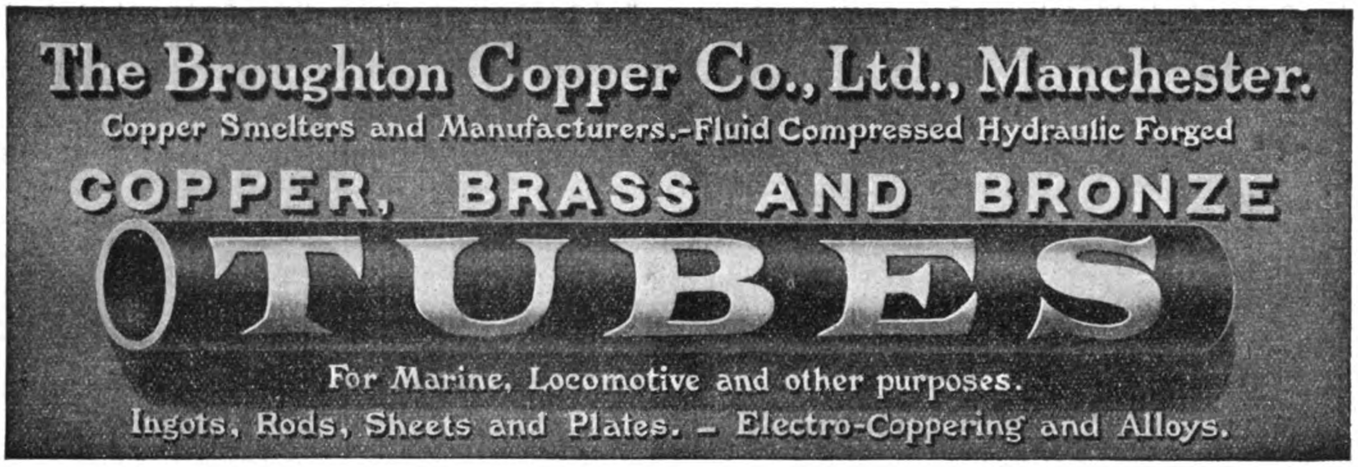

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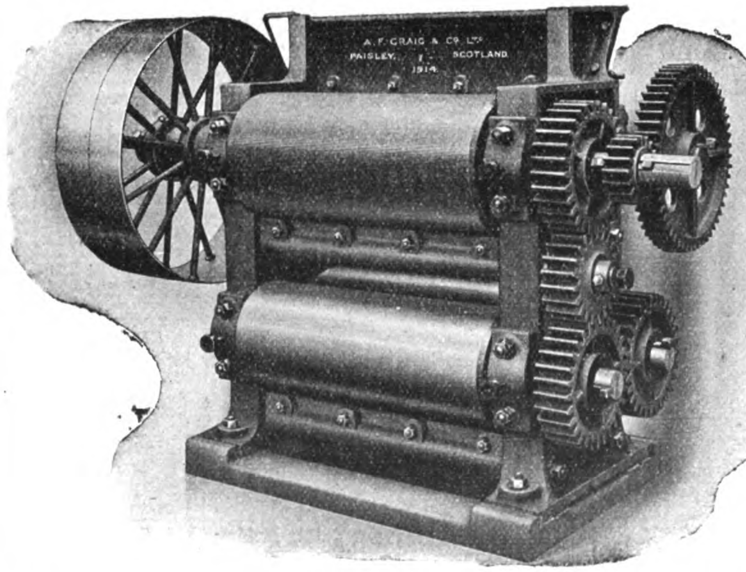

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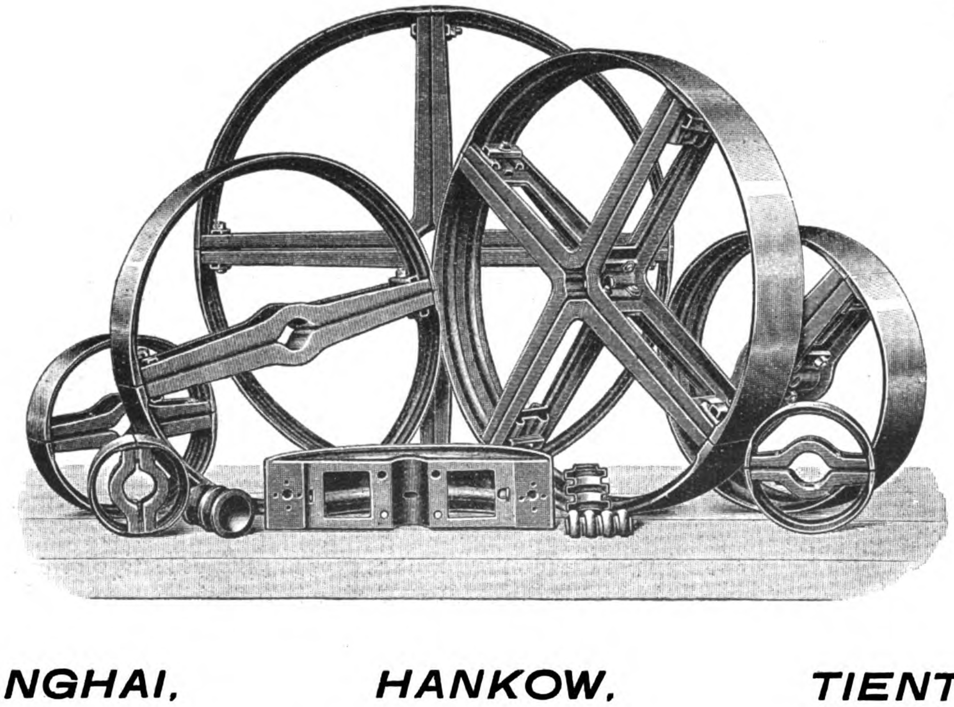

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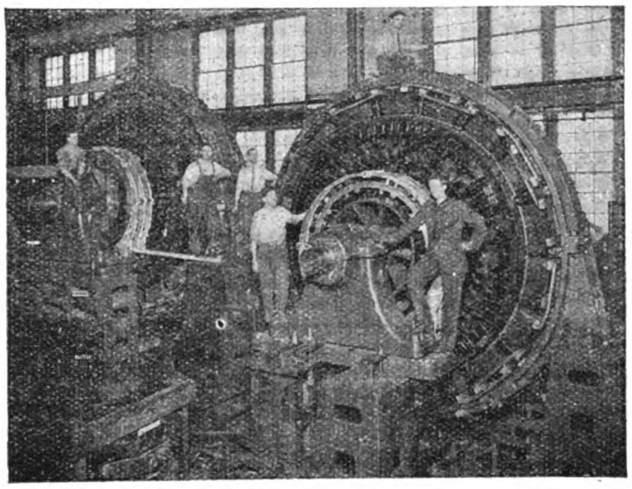

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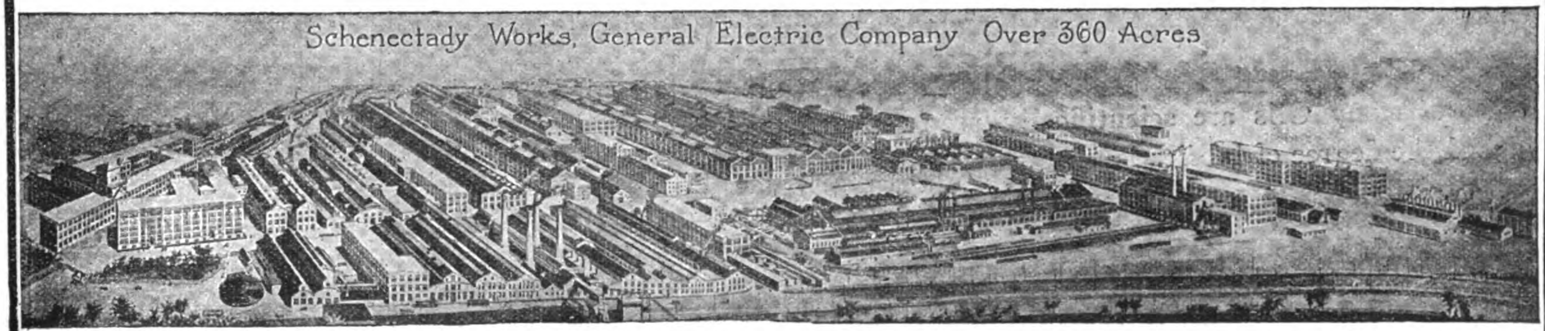

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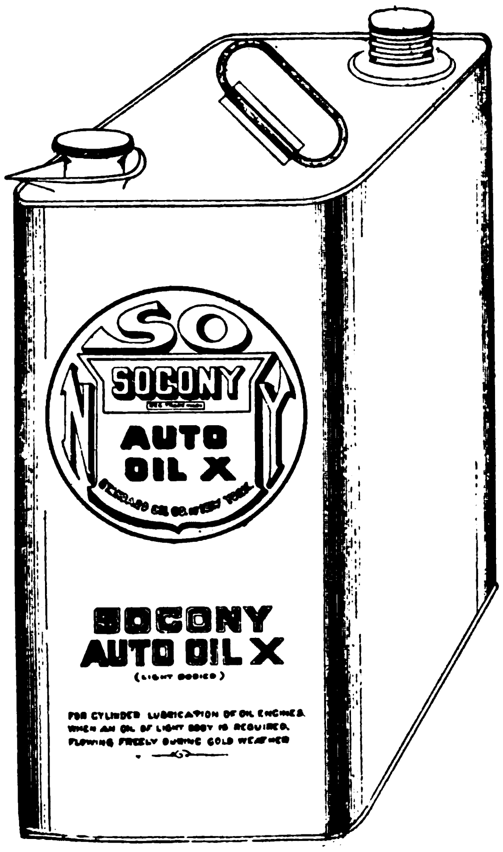

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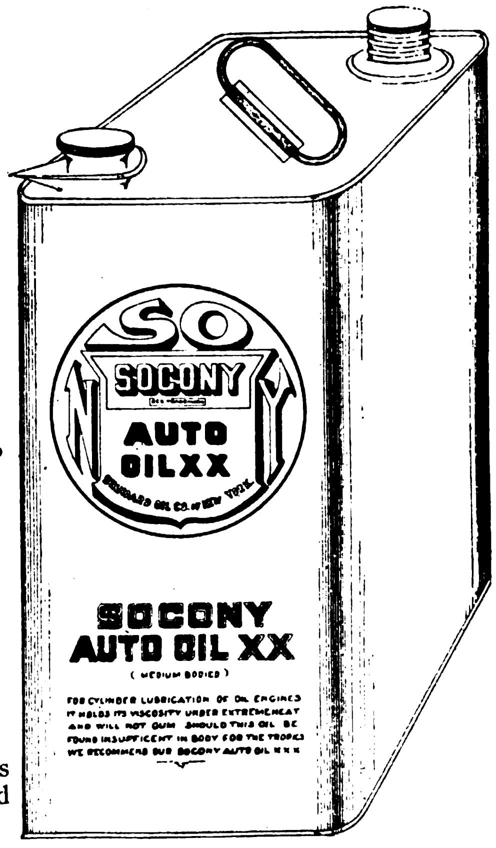

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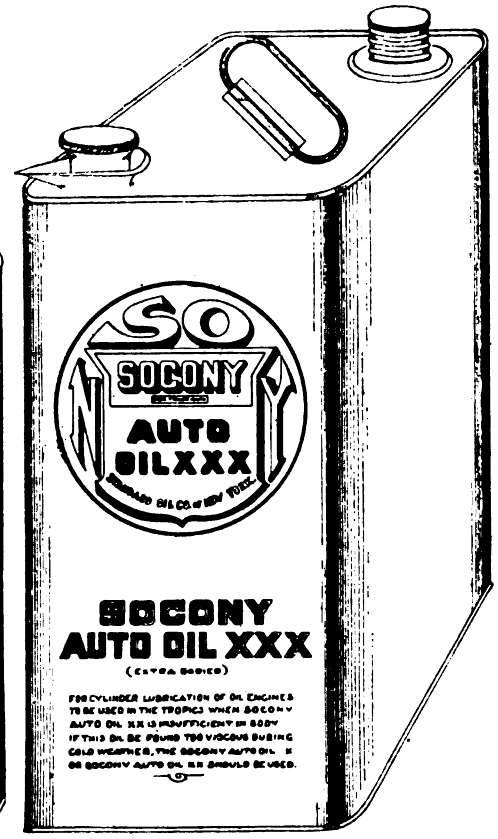

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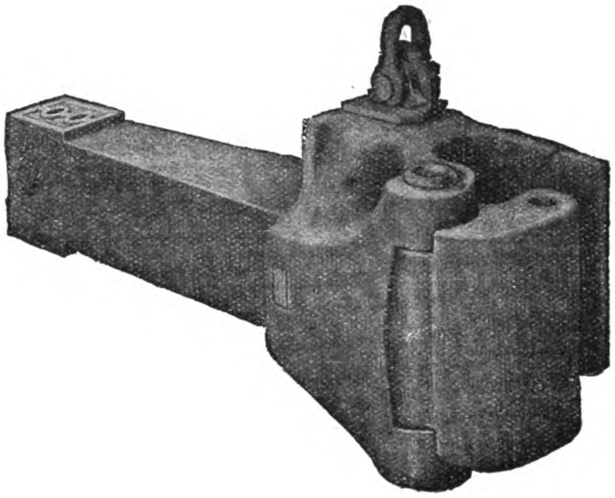

THE latest development of the Janney type of M. C. B. Coupling originally introduced and promoted by this company. This coupler has all the simplicity of the early type of the Janney coupler, and also has the up-to-date features of a "Lock-to-the-Lock," "Lock-Set," and a "Knuckle-Opener," and complies fully with all the requirements and recommendations of the M.C.B. Association of the U.S.A.

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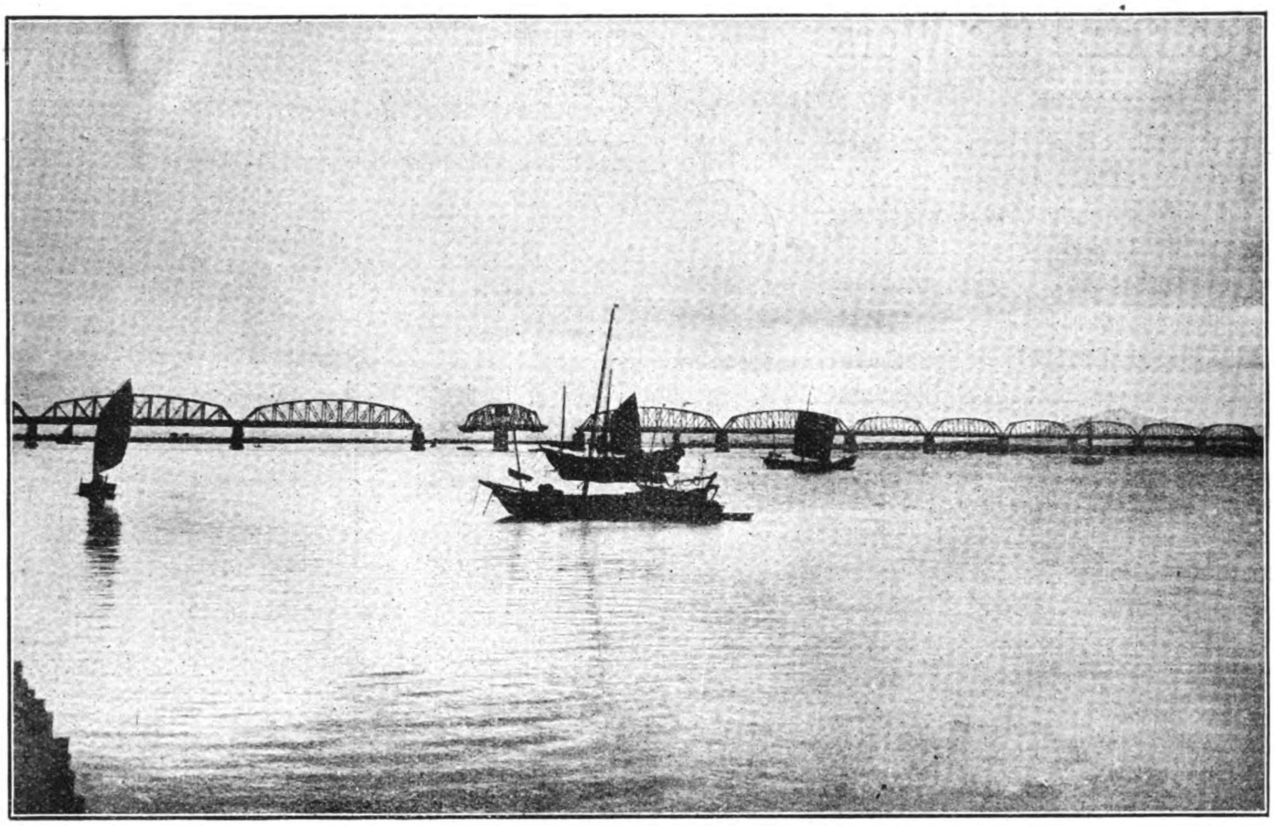

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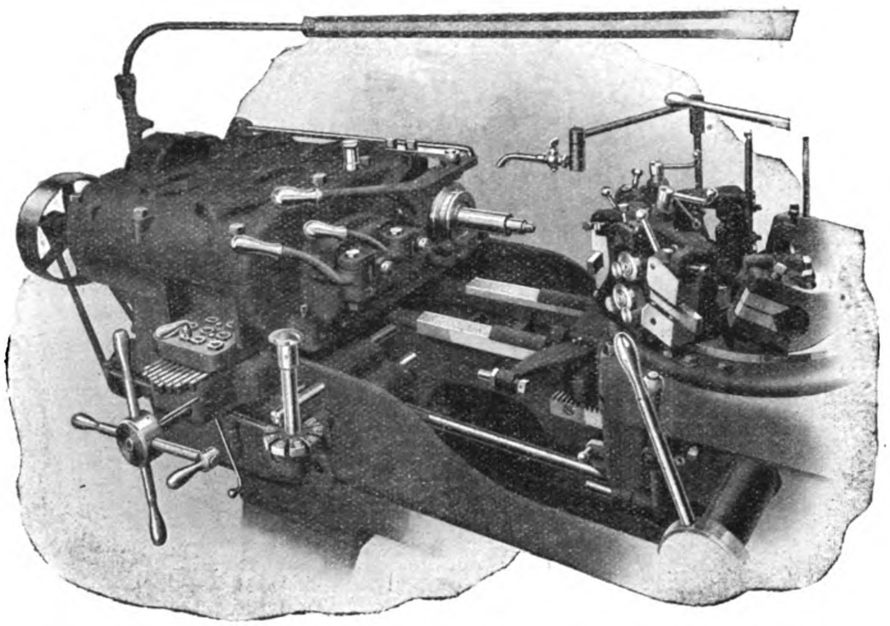

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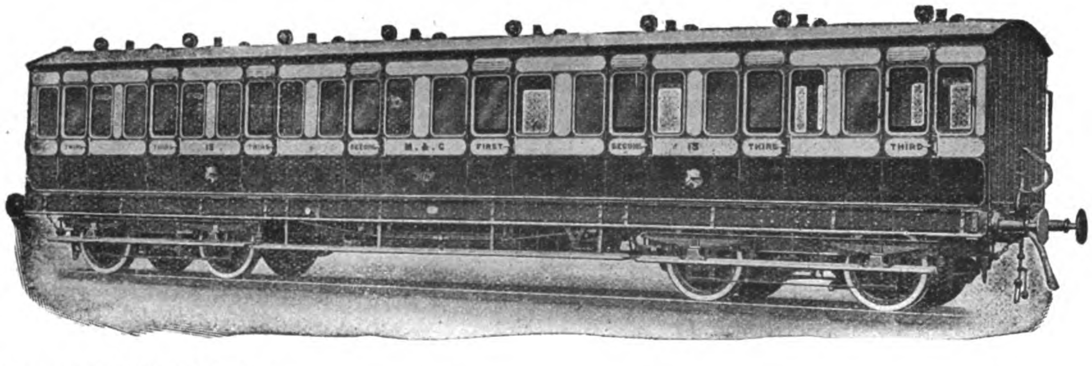

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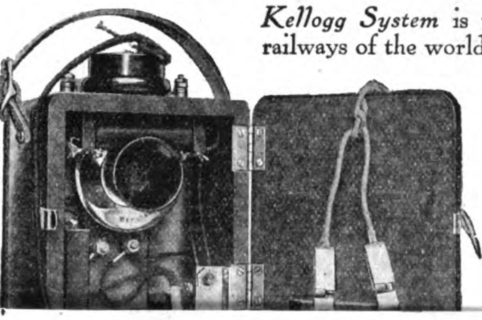

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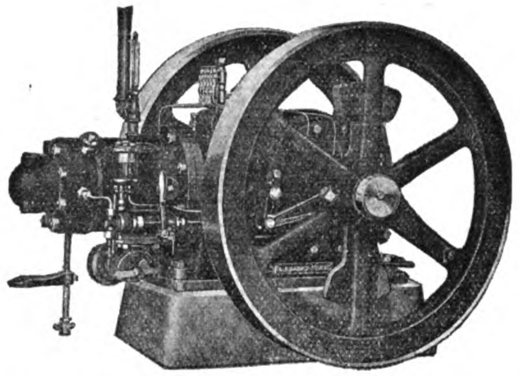

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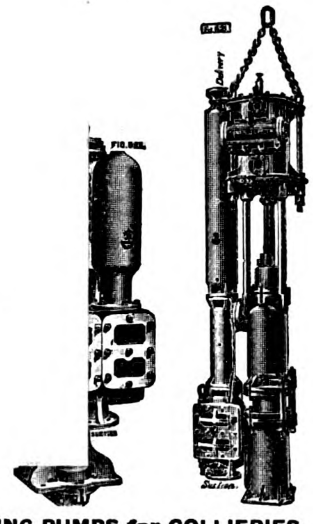
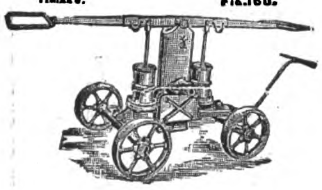


SINKING PUMPS for COLLIERIES, MINES, Etc.

Fig. 226.

Fig. 160.



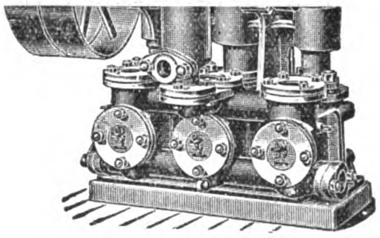
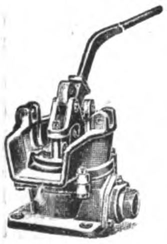


Fig. 191.

Write for "Eastern" List.



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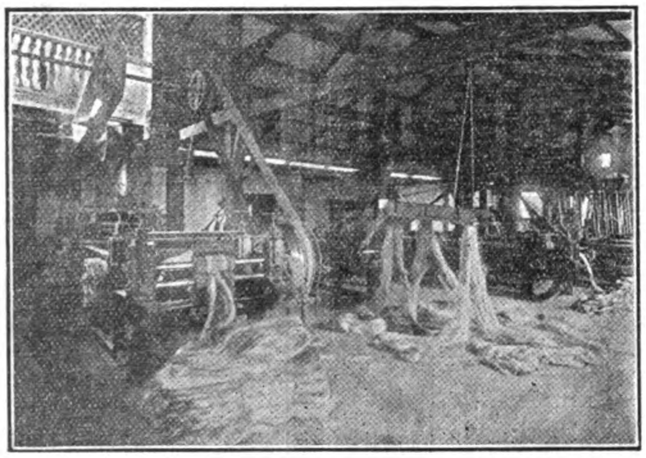

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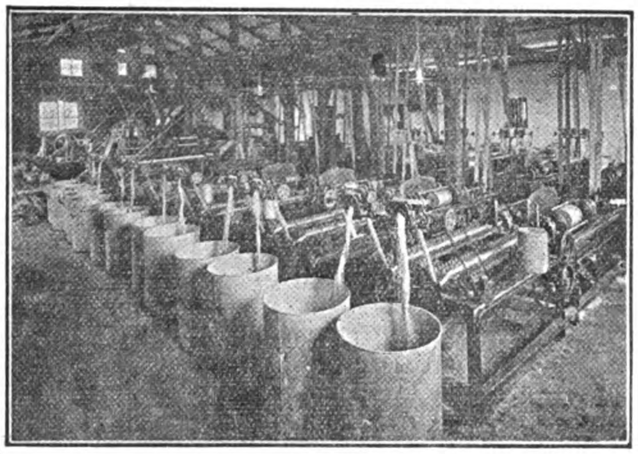

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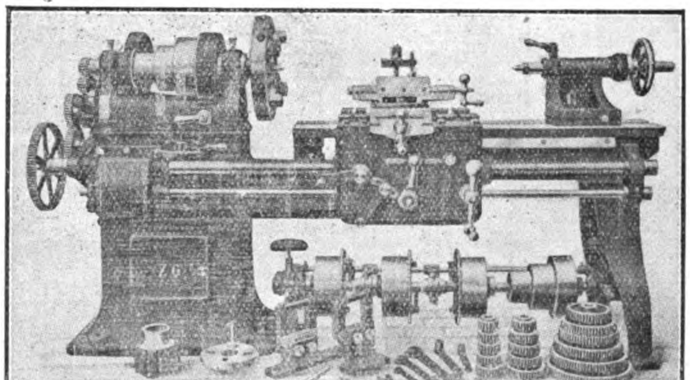

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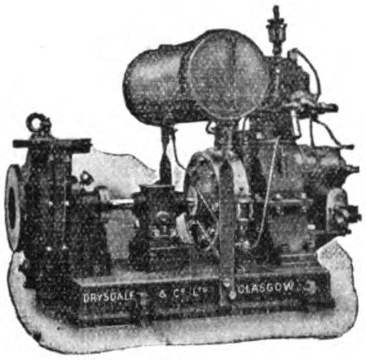

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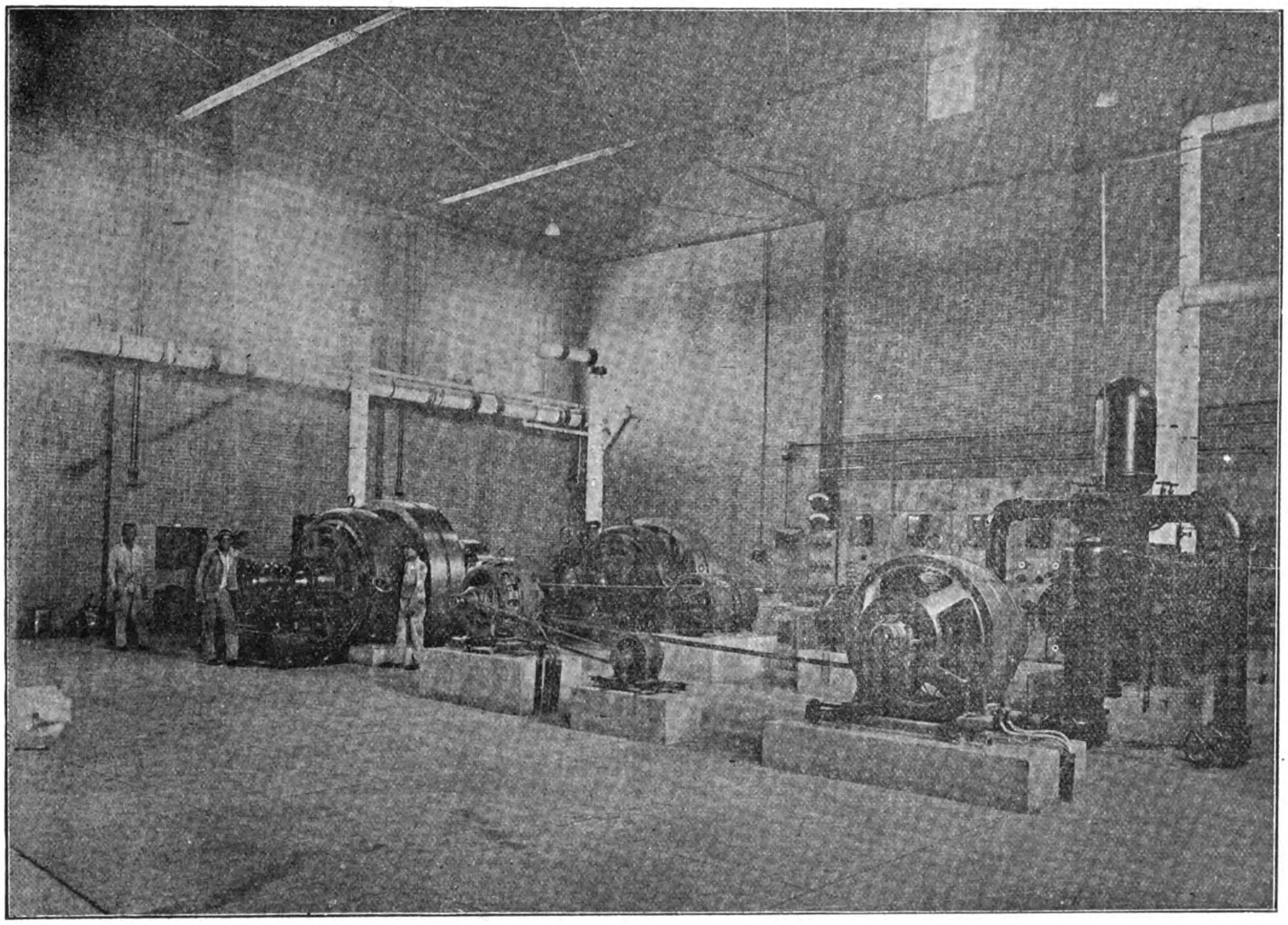

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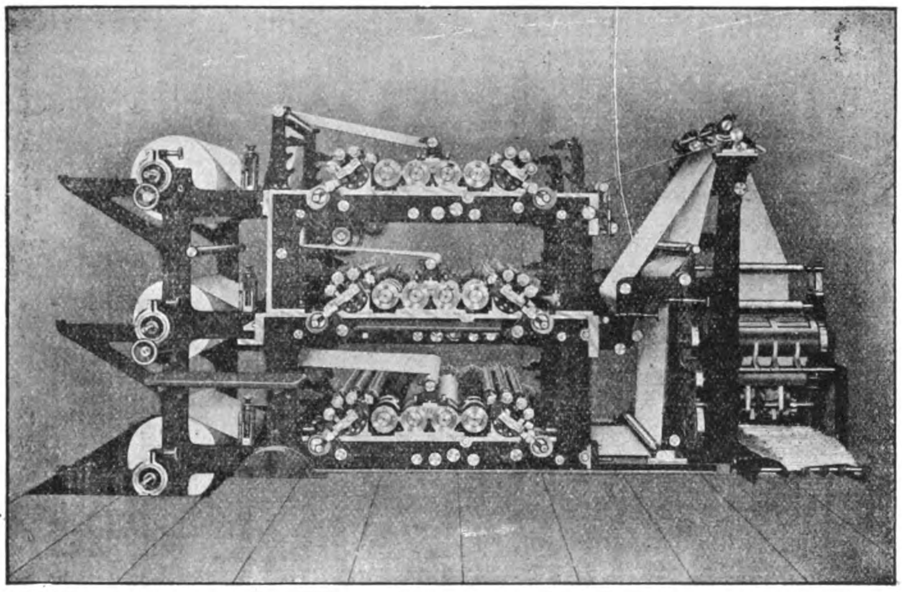

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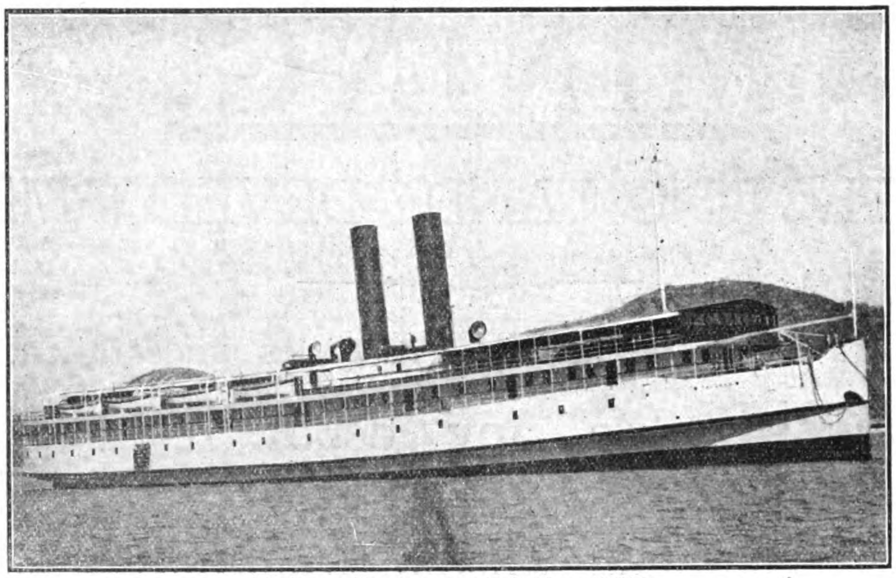

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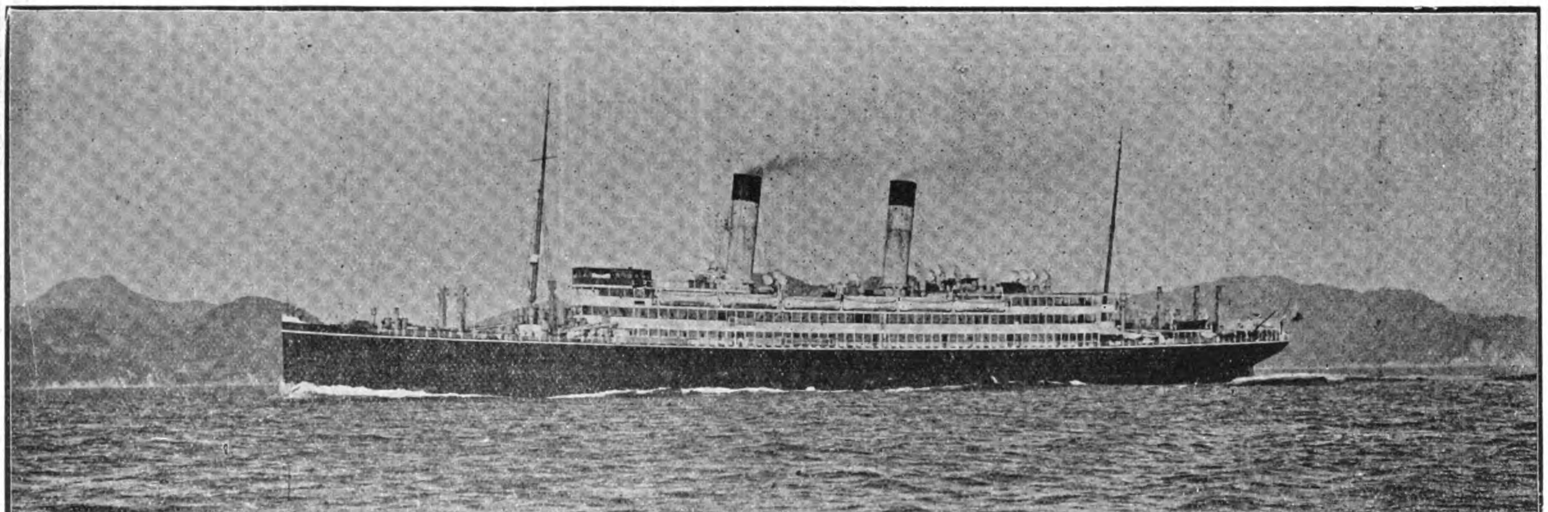

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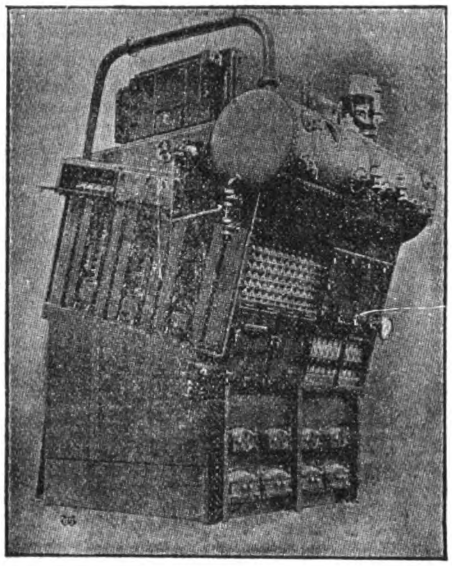

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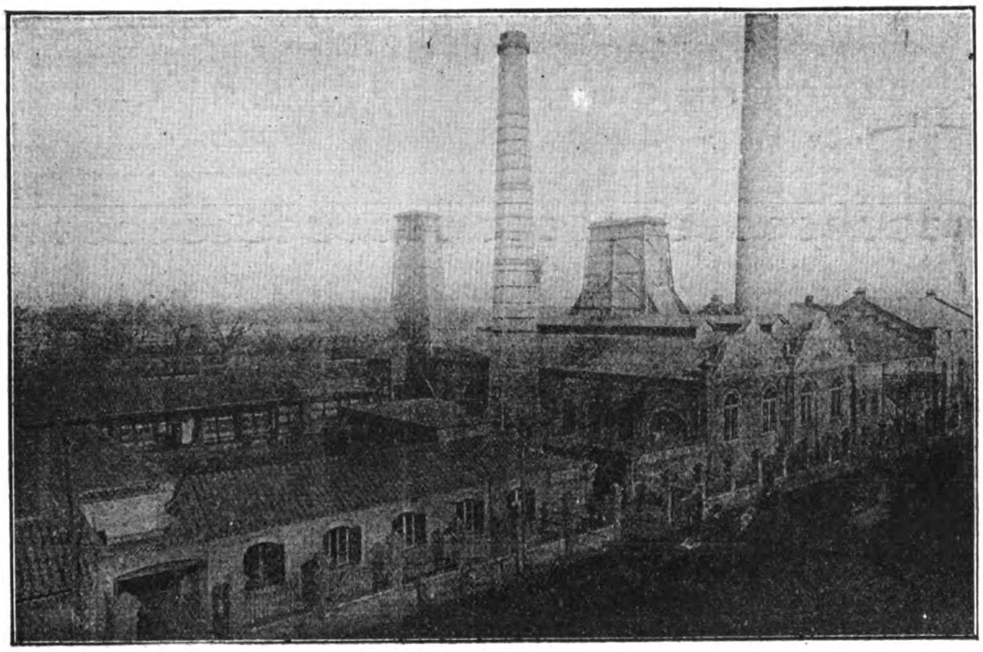

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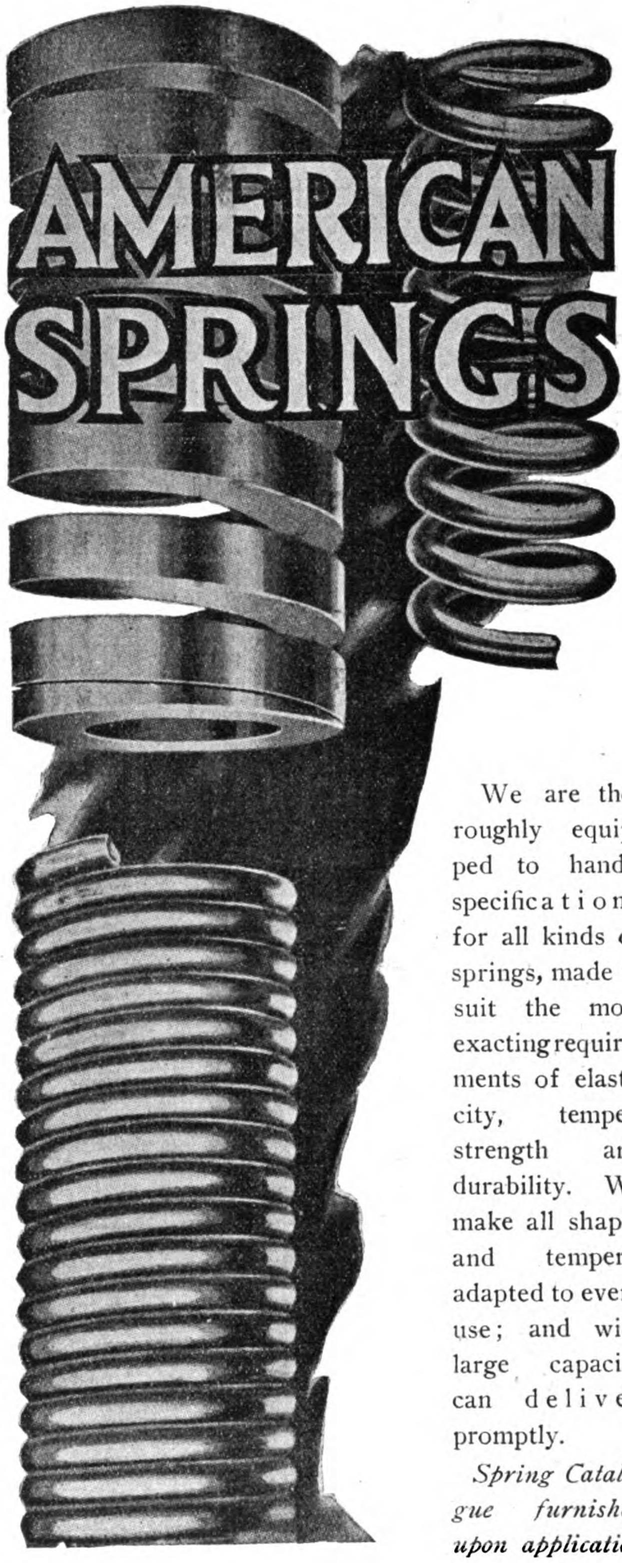

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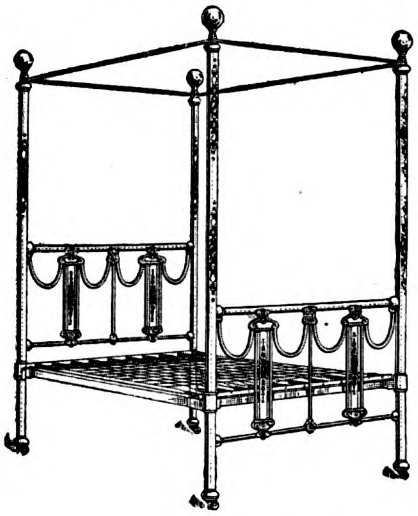

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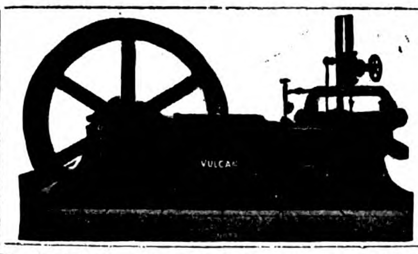

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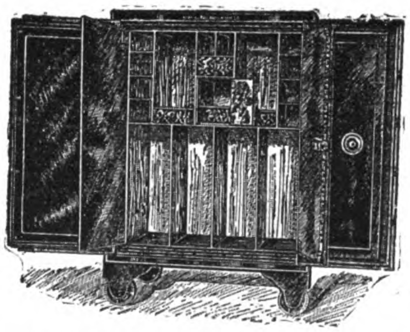

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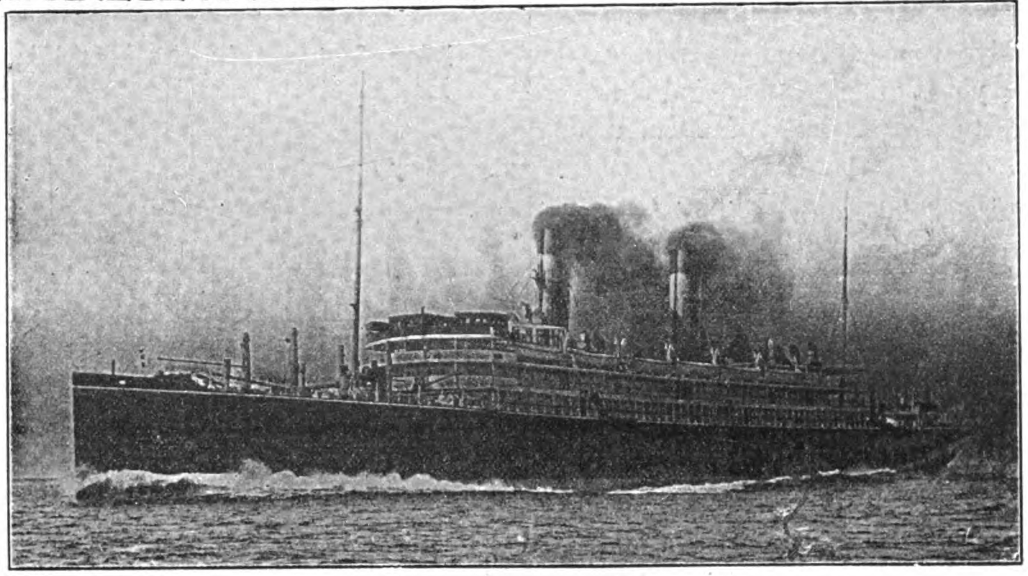

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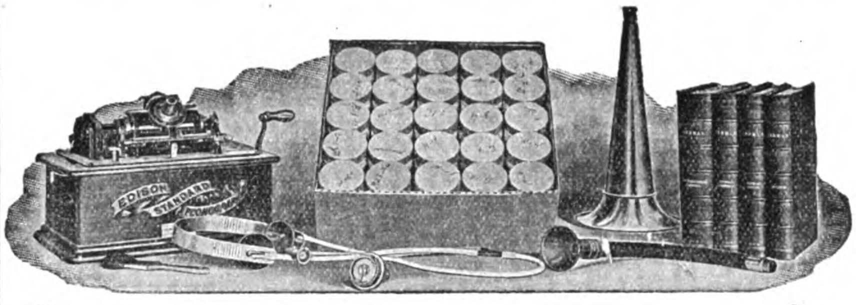

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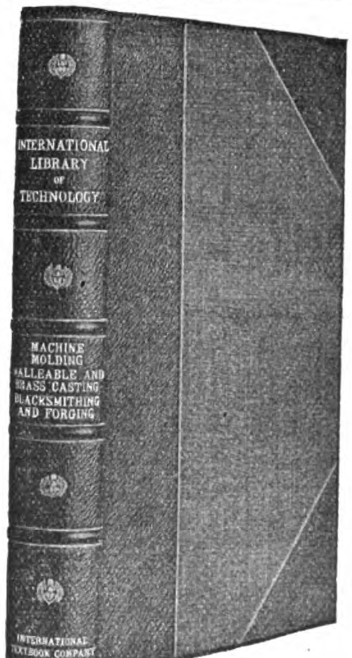

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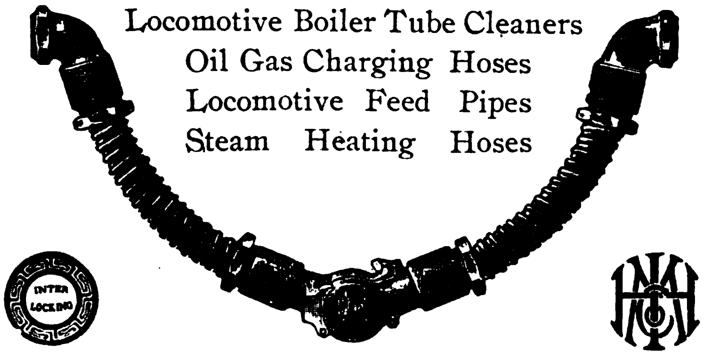

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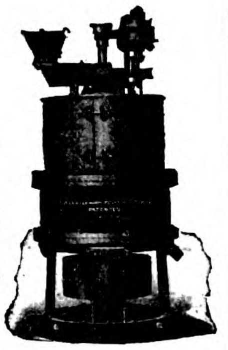

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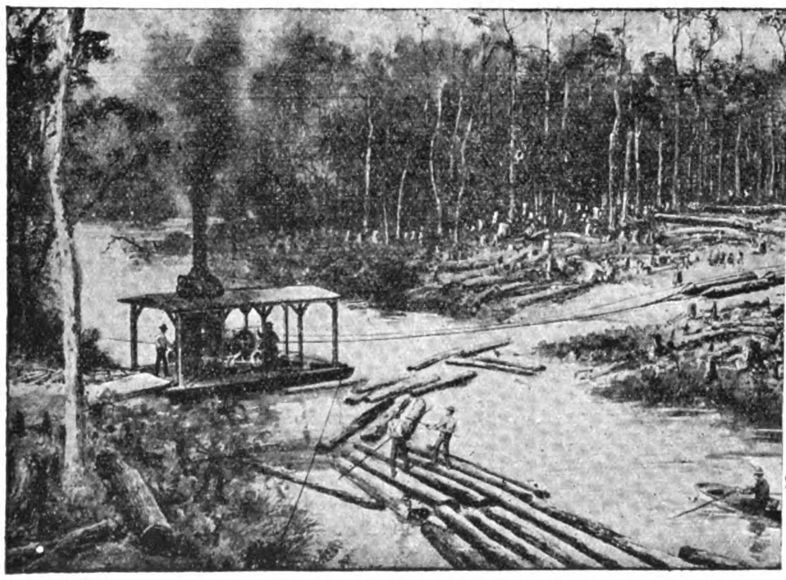

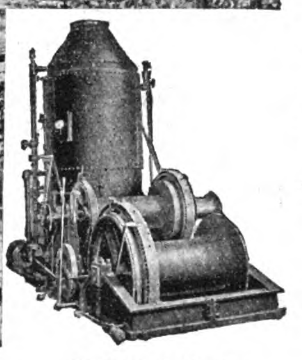

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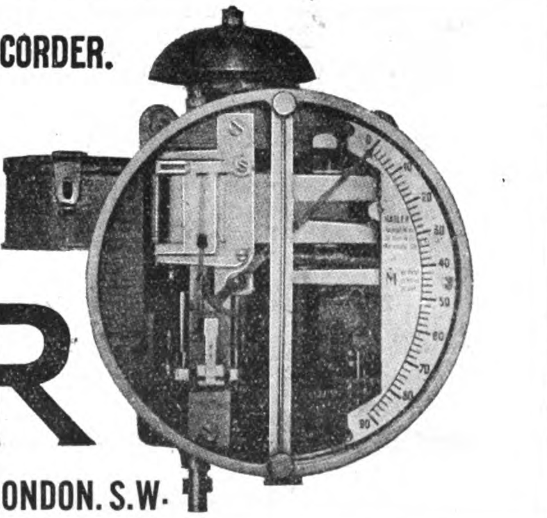

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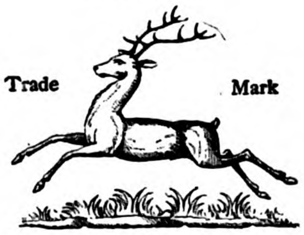

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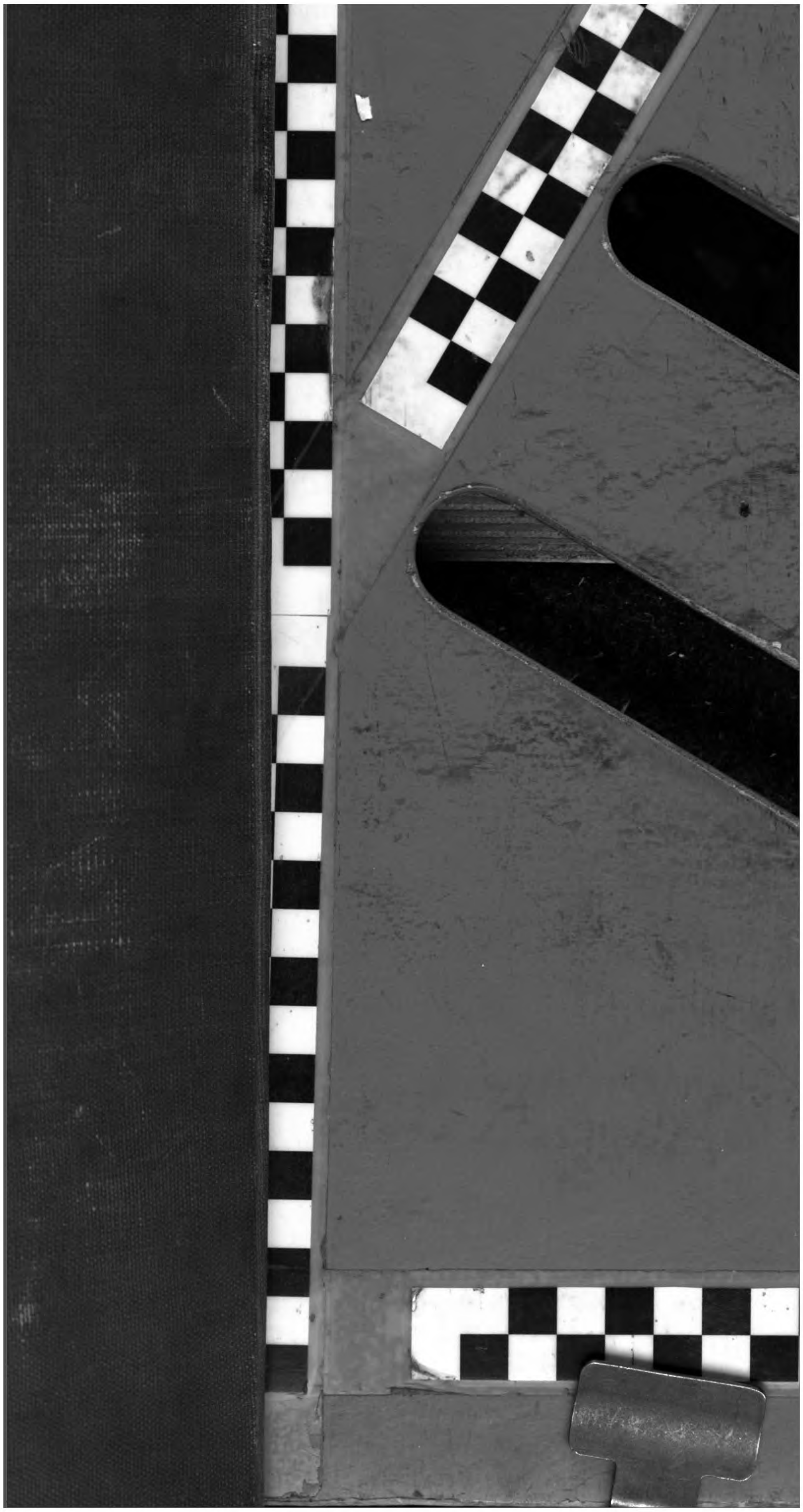
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